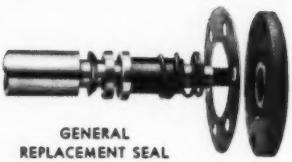
TECHNOLOGY DEPT.
Refrigeration
Service Engineer
JUL 1
JULY • 1944
VOL. 12 NO. 7

The Heat's On!

LET CHICAGO SEALS make those hot jobs just a breeze!



GENERAL REPLACEMENT SEAL

COLDSPOT SEAL

More than ever, these summer days of 1944, "the heat is on" the men who must keep America's aging refrigerators efficiently on the job of preserving food and protecting health. The bright side of the emergency for many a service man is his discovery of CHICAGO SEALS. In spite of more calls, and less help, Chicago Seals enable him to do a better job, in less time, at a satisfactory profit. That's because the *modern design* of Chicago Seals makes for easier handling as well as for doing the job right. Even if a shaft is bent or scored, the Chicago Self-Adjusting Sleeve Lock makes a perfect seal. And in addition, the Chicago Seal gives triple protection against leakage. Use CHICAGO SEALS on your next job and see how smoothly you'll breeze through.

USE CHICAGO VALVE PLATES

They save time, work, and materials. Make it possible to replace only worn parts, not entire units.
Sizes for most compressors.

ASK YOUR JOBBER for CHICAGO SEALS and VALVE PLATES

MODERN DESIGN

CHICAGO SEAL CO. 20 N. WACKER DR., CHICAGO 6, ILL.

THE REFRIGERATION SERVICE ENGINEER, Nickerson & Collins Co., Publishers, 435 N. Waller Ave., Chicago 44, Ill. Published monthly. Vol. 12. No. 7. July, 1944. Entered as second class matter March 4, 1938, Chicago, Ill., under the Act of March 3, 1879. Subscription in the United States, $2.00 per year; all other countries, $3.00 per year.

Spell
SULFUR DIOXIDE
and
METHYL
CHLORIDE!
THAT'S SIMPLE...
A-N-S-U-L*
LIQUID
Sulfur Dioxide
BY
ANSUL*
3, 10, 25, 70, 100 and 150 lb. Cylinders
*REG. U.S. PAT. OFF
LIQUID
Methyl Chloride
BY
ANSUL*
3, 6, 15, 40, 60, 90 and 130 lb. Cylinders
Available in carload lots or handy cylinders sized for servicemen's needs.
ORDERS FILLED PROMPTLY through your Ansul Jobber.
ANSUL CHEMICAL COMPANY
MARINETTE, WISCONSIN
Agents for Kinetic's "FREON-12"
RS-1-44

NATIONAL REFRIGERATION SUPPLY JOBBERS ASSOCIATION

AWARD

To the
Manufacturer
Whose Policies, Product and
Promotion Are Considered
Most Outstanding

DETROIT LUBRICATOR COMPANY
1943

To the National Refrigeration Supply Jobbers Association:

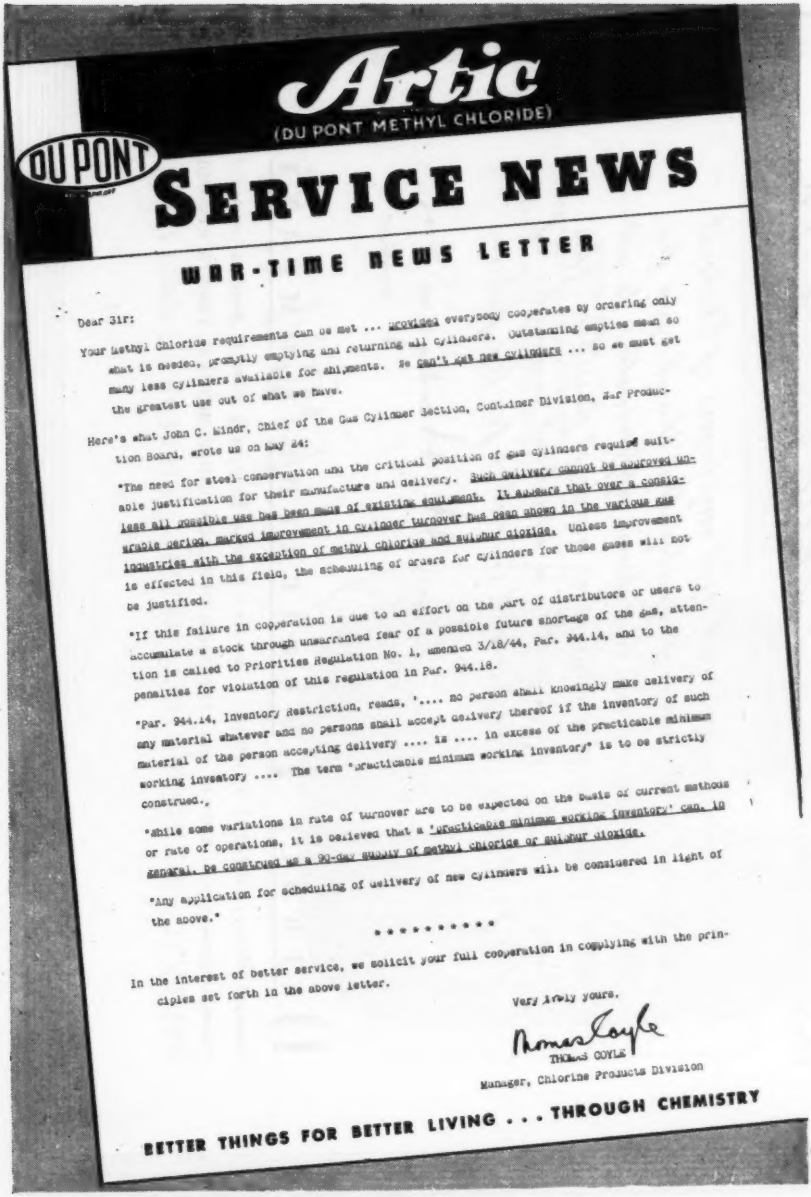
The management and employees of Detroit Lubricator Company gratefully thank you for this award and wish to express appreciation to all those whose cooperation has made it possible. This cup shall be a symbol — a constant reminder of the past — an ever present incentive for the future.

C. H. Hodges
President

DETROIT LUBRICATOR COMPANY

General Offices: DETROIT 8, MICH. • Division of AMERICAN RADIATOR & Standard Sanitary CORPORATION

Canadian Representatives: RAILWAY AND ENGINEERING SPECIALTIES LIMITED, MONTREAL, TORONTO, WINNIPEG



Artic
(DU PONT METHYL CHLORIDE)

DU PONT

SERVICE NEWS

WAR-TIME NEWS LETTER

Dear Sir:

Your Methyl Chloride requirements can be met ... provided everybody cooperates by ordering only what is needed, promptly emptying and returning all cylinders. Outstanding empties mean so many less cylinders available for shipments. We can't get new cylinders ... so we must get the greatest use out of what we have.

Here's what John C. Mindr, Chief of the Gas Cylinder Section, Container Division, War Production Board, wrote us on May 24:

"The need for steel conservation and the critical position of gas cylinders require suitable justification for their manufacture and delivery. Such delivery cannot be approved unless all possible use has been made of existing equipment. It evidence that over a considerable period, marked improvement in cylinder turnover has been shown in the various gas industries with the exception of methyl chloride and sulphur dioxide. Unless improvement is effected in this field, the scheduling of orders for cylinders for these gases will not be justified.

"If this failure in cooperation is due to an effort on the part of distributors or users to accumulate a stock through unwarranted fear of a possible future shortage of the gas, attention is called to Priorities Regulation No. 1, amended 3/18/44, Par. 944.14, and to the penalties for violation of this regulation in Par. 944.18.

"Par. 944.14, Inventory Restriction, reads, '.... no person shall knowingly make delivery of any material whatever and no persons shall accept delivery thereof if the inventory of such material of the person accepting delivery .... is .... in excess of the practicable minimum working inventory .... The term "practicable minimum working inventory" is to be strictly construed.'

"While some variations in rate of turnover are to be expected on the basis of current methods or rate of operations, it is believed that a 'practicable minimum working inventory' can, in general, be construed as a 90-day supply of methyl chloride or sulphur dioxide.

"Any application for scheduling of delivery of new cylinders will be considered in light of the above."

* * * * * * * * * * *

In the interest of better service, we solicit your full cooperation in complying with the principles set forth in the above letter.

Very truly yours,

Thomas Coyle

THOMAS COYLE
Manager, Chlorine Products Division

BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

You'll do faster flaring with a SLIP-ON YOKE!

The No. 195-F Imperial Flaring Tool with e Slip-on Yoke has made a great hit with rigeration men everywhere.

The illustrations show how easy it is to e. The yoke is made so that it slips right er the bar instantly without twisting or rning. Inside edges of the yoke are slotted that once in position a slight turn holds in place.

If you haven't used one you will be surprised how this improvement speeds up flaring.

The No. 195-F Flaring Tool makes correct 45° flares on 1/4", 5/16", 3/8", 1/2" and 5/8" O.D. soft copper, brass or aluminum tubing to make up leakproof SAE flare joints.

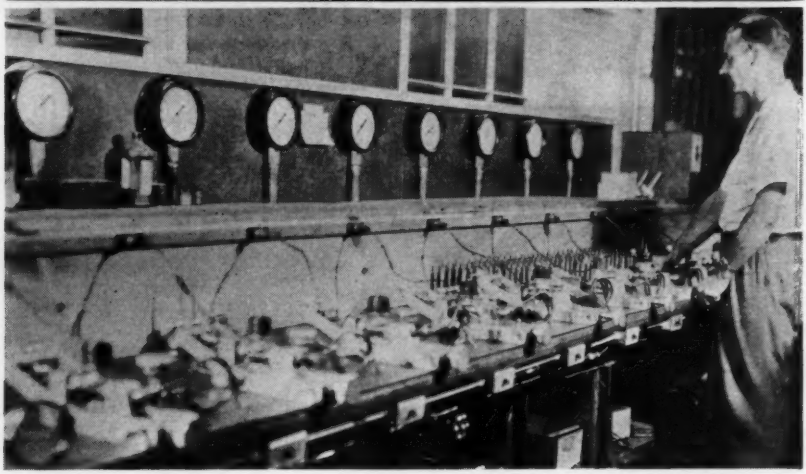
If your Jobber cannot supply you with one of these flaring tools from stock he can secure it for you in a short time.

HE IMPERIAL BRASS MANUFACTURING CO., 534 South Racine Ave., Chicago 7, Illinois

IMPERIAL

FITTINGS • STRAINERS • DEHYDRATORS • VALVES • FLOATS • CHARGING LINES
TOOLS FOR CUTTING, FLARING, BENDING, COILING, PINCH-OFF AND SWEDGING

Dress Rehearsal for Solenoids–



One of a series of actual photographs taken in the Alco plant.

More rigorous and exacting than any later performance

ALCO

Designers and Manufacturers of
Thermostatic Expansion Valves
Pressure Regulating Valves
Solenoid Valves
Float Valves

Now, More Than Ever,
BUY BONDS

This battery of testing units, designed by Alco engineers, puts all Alco Solenoid Valves through a series of operational maneuvers far more severe than any they will encounter in actual service.

For instance, they must hold 200 lbs. of air against a dry metallic valve seat as ample assurance of positive seal when used with refrigerant and oil at lower pressures. A make-and-break circuit, cycling 42 times a minute, tests coils and plungers.

Each valve travels through these test fixtures twice, both before and after complete assembly. Every possible service strain is anticipated to make Alco Solenoids tighter, more responsive, more enduring, under actual working conditions.

ALCO VALVE COMPANY – 857 Kingsland Avenue, St. Louis, Missouri

THE HALLMARK OF *Quality*

The rectangle and triangle design shown above is the Mueller Brass Co. hallmark for refrigeration products. It appears in our advertising, on all our packages, on our labels and even on the goods themselves. It is generally carried in red, blue, white and black. Variations of color may sometimes be used, but the shape of the mark itself is always the same.

Our trademark is a point of honor with us as well as a mark of identification of our goods. It means that products of our manufacture carrying it are the best we know how to produce...and time-tested for the purpose they are intended to serve.

The Mueller Brass Co. line of refrigerator valves, fittings and accessories is exceptionally complete. Service engineers can place full confidence in them. Rigid laboratory control, skilled engineering, highest quality materials, precision workmanship and rigid inspection combine to make our products constantly dependable.

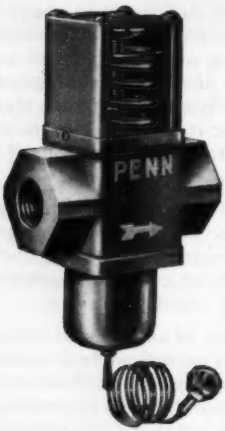
Mueller Brass Co. refrigeration products are in use with our armed forces on practically every front. They are incorporated in units produced by other manufacturers who depend upon us for prompt service and quality products.

Write for catalog number 2007.

MUELLER BRASS CO.
PORT HURON, MICHIGAN

PENN puts a . . .

to water valve troubles



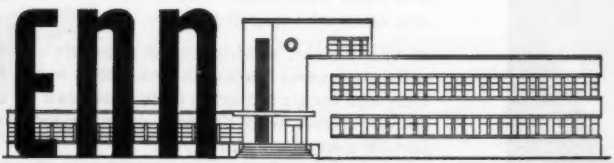
NO sliding parts in contact with water . . . hence no sedimentation, no rust. There's one of the reasons for the trouble-free performance found in PENN'S Series 246 Water Regulator.

But that's not all! Note the additional features which PENN'S *advanced engineering design* has given this valve:

- No sticking of seats
- No water hammer
- No need for lubrication
- No drain plug . . . yet freezeproof
- Valve can be flushed manually.

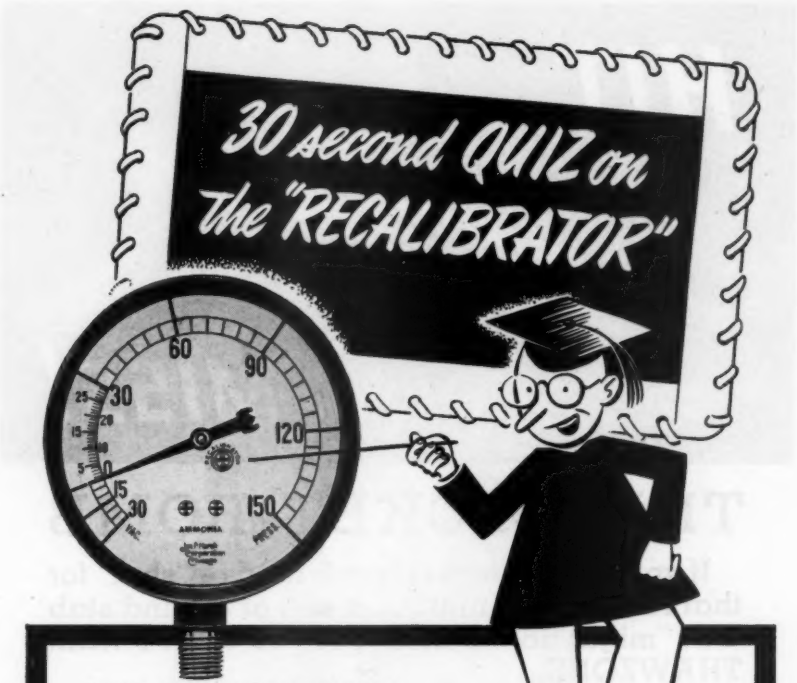
Take advantage of these improvements—and *put a stop to water valve trouble!* Complete information on the PENN 246 is yours for the asking. Write now for Bulletin R-1986! *Penn Electric Switch Co., Goshen, Indiana—Export Division, 13 E. 40th St., New York 16, U. S. A.* In Canada: Powerlite Devices, Ltd., Toronto, Ontario.

PENN



AUTOMATIC CONTROLS

FOR HEATING, REFRIGERATION, AIR CONDITIONING, ENGINES, PUMPS AND AIR COMPRESSORS



WHAT IS THE "RECALIBRATOR"?

It's the first completely satisfactory and convenient way to correct a gauge that has been knocked out of adjustment. (Any gauge can be.)

ISN'T IT JUST ANOTHER "ADJUSTMENT"?

No sir. The "Recalibrator" doesn't merely attempt to compensate for the error. It re-establishes proper relation between bourdon tube and movement—actually recalibrates the gauge throughout its range.

DOES IT MAKE THE GAUGE COMPLETELY ACCURATE AGAIN?

Right—at all points on the scale.

IS THIS CORRECTION EASY TO MAKE?

Simply turn that screw on the dial until the pointer is at zero when not under pressure. Almost quicker than you can say the word "Recalibrator", the job is done.

WHAT GAUGES OFFER THE "RECALIBRATOR"?

The "Recalibrator" is available in all Marsh Gauges; standard in all Marsh Dial Thermometers. It's the mark of an instrument that has behind it more than 75 years of gauge-making experience.

JAS. P. MARSH CORP., 2039 Southport Avenue, Chicago 14, Illinois

MARSH *Refrigeration Instruments*

THE ROCKET-BOMB

If you want a rocket-bomb kind of "shot" for that refrigerator unit . . . a sort of a blind stab that "might do the trick" . . . you DON'T want THAWZONE.

But, if you demand a scientifically planned "mechanism" that carries the "bomb" to the area and cruises around until it finds the "target" (moisture), you will contact the nearest THAWZONE jobber.

A TINY AMOUNT → **A BIG JOB** ← SMALL COST

THAWZONE

Fully Protected by U. S. Patents

The PIONEER FLUID DEHYDRANT

HIGHSIDE CHEMICALS COMPANY

195 VERONA AVE. NEWARK 4, N. J.

VIRGINIA
Refrigerants

TESTED PURITY for SERVICE SURETY

"EXTRA DRY ESOTOO", "V-METH-L" AND METHYLENE CHLORIDE

AGENTS FOR KINETIC'S "FREON-12"—AND "FREON-22"

VIRGINIA SMELTING CO.

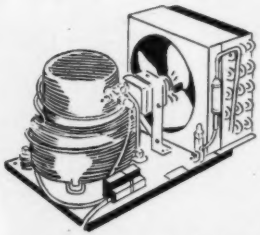
WEST NORFOLK, VIRGINIA

72 Beaver St., New York 5 131 State St., Boston 4

BALANCE

IS IMPORTANT IN *HERMETICS* TOO!

All of us here at *Tecumseh* are very conscious of the art of balance—we are fully aware of its supreme importance—we're building condensing units that are in perfect balance—built to tolerances in the ten-thousandth of an inch, resulting in smooth perfection of movement, comparable to the finest timepiece—without noise and without vibration.



However, the condensing unit must also be in perfect balance with the final refrigeration system, otherwise all our efforts toward perfection in the condensing unit are lost. And that's where our engineers excel.

Before settling on postwar designs consult "*Chieftain—The leader in Hermetics.*" For complete data write our sales department.

Chieftain

TECUMSEH PRODUCTS CO.
TECUMSEH, MICHIGAN

Maintaining,

"UNDER PRESSURE" THE CHARACTERISTIC PRECISION AND DEPENDABILITY OF

KEROTEST BRASS VALVES

FOR AIR CONDITIONING AND REFRIGERATION SERVICE

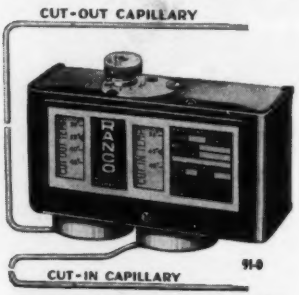
KEROTEST QUALITY NEVER VARIES

Kerotest has, since its inception, developed many new and frequently revolutionary type valves to solve complicated industrial control problems. In World War II, Kerotest research and engineering organization is demonstrating its ability to maintain unvarying dependability and precision, despite an unprecedented demand for production. It is meeting that production demand with Kerotest quality valves. With many techniques in utilizing new materials, and designs evolved out of the war program by our research staff, *Kerotest offers you a dependable and satisfactory source for post-war valves.* Kerotest is looking forward to the time when it can convert its war production to peace-time needs.

KEROTEST Valves

KEROTEST MANUFACTURING COMPANY
PITTSBURGH, PENNSYLVANIA

"Joe Really Believes in Working Close With His Ranco Jobber!"



The Ranco Type 91-0 Commercial Control with exclusive interlocking two-temperature control assures uniform fixture temperatures, uniform high relative humidity and complete automatic defrosting of the coil regardless of weather or load conditions or a cold location of the compressor. Ask your jobber about this and other Ranco Commercial and Domestic Controls.

WE don't expect you to take this picture literally, but what we do want to emphasize is this: *Cooperate closely with your Ranco Jobber.* There are many ways he can help you. Perhaps the exact Ranco Replacement Control you want is unavailable at this time. When he must recommend a substitute, accept it cheerfully and confidently, for he will recommend one that is easily adaptable. And, rest assured, that any Ranco Control he suggests is a precision instrument, sturdily made, dependable and accurate in operation.

Ranco Inc.

COLUMBUS OHIO

The Refrigeration Service Engineer

Vol. 12 No. 7

July, 1944

A Monthly Illustrated Journal Devoted to the Interests of the Refrigeration Service Engineer in the Servicing of Domestic and Small Commercial Refrigeration Systems and Oil Burners

Official Organ
REFRIGERATION SERVICE ENGINEERS SOCIETY

The Cover

A small tractor and a large fuel servicing truck emerging from the new test refrigerator built by the York Corporation at Wright Field, O., after being put "on ice" to test the ability of Air Forces equipment to take the punishment of Arctic weather. The 80-feet long cold chamber is capable of operating at temperatures lower than 70° F. below zero. The 16-inch thick double doors, which weigh 4½ tons, are electrically controlled.

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Telephones Austin 1303-1304-1305

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Telephone Lexington 2-4816

Publishers of Technical Books and Trade Journals Serving the Refrigeration Industries for over 50 years.

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TABLE OF CONTENTS

Government Bureaus—News and Rulings 17
Relaxation on Civilian Goods 17
Amendment of M-28 Eases Restrictions on Freon 17
Essential Goods Available for Civilian Economy 18
Summary of Pricing Records 18
Sterling Smith Resigns 19
Preference Ratings Clarified 19
Maximum Prices Revised 19
Pricing Rebuilt Small Motors 20
Production of Small Motors 20
Procuring Copper Tubing 20
Servicing General Electric CA Machines 21
Service Pointers 24
So You Think You Have Troubles? 24
Neat Installations Pay 25
Training Refrigeration Technicians for the Army —*by Major Raymond C. Gunther* 26
Appliance Industry Asks WPB to Place Ban on All New Models 30
Commercial Selling 31
Service Shop Expands Business Through Selling Used Equipment 31
New Home Freezer Units Are Designed to Meet Post-War Demands 34
The Question Box 36
Controlling Low Temperature Storage 36
Testing Compressors 36
Grunow Pump Dirty 38
Refrigeration Advisory Committee Holds Meeting on Industry Problems 40
Dealer Violates Ceiling Price 42
R.S.E.S. News 44
Elm City Chapter Files Petition for Charter 44
New Chapter Organized at Reading, Pa. 44
Evansville and Tri-State Chapter 44
Chapter Notes 46
Ladies Auxiliary 52
New and Improved Appliances 48
News of the Industry 54

Valves for all refrigeration purposes!

The Weatherhead reputation in the refrigeration field has long been due to the practical engineering with which we endow the many products we make for this industry. Our line of refrigeration valves has been designed and engineered by Weatherhead men who have gone into the field and studied each product in scores of routine uses. As a result, Weatherhead refrigeration valves embody numerous refinements which, coupled with our years of production know-how, make them the first choice of seasoned refrigeration designers and engineers for both domestic and commercial units.

Look Ahead with

Weatherhead

THE WEATHERHEAD COMPANY, CLEVELAND, OHIO

Manufacturers of vital parts for the automotive, aviation, refrigeration and other key industries.

Plants: Cleveland, Columbia City, Ind., Los Angeles
Canada—St. Thomas, Ontario

Government Bureaus—News and Rulings

ANNOUNCEMENTS and rulings by government bureaus of general interest to the refrigeration service industry are reviewed or summarized as follows: The more important facts are given on releases that are of special interest. Those who wish further information are advised to write direct to the proper government agency.

✕ ✕ ✕

Relaxation on Civilian Goods

THE go-ahead signal for gradually lifting of WPB restrictions on the manufacture of civilian goods where no interference with the war effort will result, was recently given by Donald Nelson, WPB chairman.

While military production will still be given first consideration, in the interests of war production itself and for the production of the entire economy, it is essential to prepare now for the return to civilian production, Mr. Nelson stated. He outlined three specific steps to help industry plan and prepare for the reconversion period, as follows:

1. WPB is preparing an order authorizing manufacturers to acquire enough materials and components to make and test a single working model of any product planned for post-war production.

2. Instructions have been issued to revoke immediately WPB orders limiting the use of magnesium and aluminum so that manufacturers will be able to obtain these metals and fabricate them into essential end products. Existing restrictions on the manufacture of end products from aluminum and magnesium will be lifted to permit manufacture of items from these metals as the manpower situation permits.

3. Beginning July 1, manufacturers will be allowed to purchase machinery, tools, and dies for civilian production whenever possible out of the existing surpluses listed with WPB and the Defense Plants Corp.

A list of the 200 or so most urgently needed civilian items has been released, according to news reports, and among those to which relaxation will first apply are mechanical refrigerators, other refrigeration and air conditioning items, and ice refrigerators.

Amendment of M-28 Eases Restrictions on Freon

CERTAIN users of Freon 12 in air conditioning systems may be authorized to replenish their supply on application to WPB, according to an amendment of Order M-28, issued July 5. Formerly all users on List A of the order were not permitted to receive Freon 12 and this prohibition is continued in the present amendment "unless the delivery and use has been specifically authorized in writing by the War Production Board. It will be the general policy of the Board not to authorize delivery and use of F-12 gas for any List A system except in the following cases:

"(i) When the major portion of the space to be air conditioned is used as a radio broadcasting studio, auditorium, hotel, restaurant, cafeteria, school, office or office building, or department store, and one of the following conditions exists: The building is 'windowless' or one in which the windows cannot be opened for ventilation (such as glass brick, or glass set in a fixed frame which was built into the surrounding wall in an immovable way); or the rooms needing air conditioning are interior ones having no other means of adequate ventilation and are either served by a separate system or constitute a major portion of the space regularly occupied by persons and are served by one central system; or

"(ii) When the system is used to air conditioning a room or rooms in a single family residence or a single apartment and its continued operation is essential to protect the life or restore the health of a person suffering from a serious ailment or disease and under care of a licensed physician, and a statement to that effect by such physician is also furnished with the application referred to below.

"Application for WPB permission to get F-12 gas for such a use should be made by the owner or operator of the system by letter in duplicate (or in an emergency, by wire confirmed immediately by letter) to War Production Board, General Industrial Equipment Division, Washington 25, D. C., Ref. M-28 giving the address and a description of the building(s) in which the system is

located and stating the extent to which the system comes within either of the cases described above, the quantity of F-12 gas needed, and the name and address of the probable supplier. The authorization, if granted, will be sent to the applicant, who should show it to his supplier when requesting delivery." In other respects the order remains unchanged.

More Freon Promised

Air conditioning systems unable to operate or idling along at a sultry pace because of lack of Freon, will be back on the job next year, the War Production Board promises. Kinetic Chemicals, Inc., is undergoing its third wartime plant expansion. Due for completion this September, the added capacity, according to the Wall Street Journal, is supposed to be sufficient to produce all the Freon needed for the war, plus enough to keep civilian apparatus going.

S S S

Essential Goods Available for Civilian Economy

A REPORT on quantities of essential goods needed by the civilian economy issued by William Y. Elliott, vice-chairman for Civilian Requirements of the WPB, includes mechanical refrigerators, water coolers, walk-in coolers, evaporative coolers, dairy refrigerators, display cases, dough retarders, reach-in coolers, ice refrigerators and electric motors. (See table below.) Amount of these commodities are classified in three levels, representing unrestricted supply (based on what manufacturers could probably produce), short supply on the market (minimum essential requirements assuming no control on distribution), and present essential requirements (controlled distribution through priorities system).

Summary of Pricing Records

A SUMMARY of the pricing records that manufacturers, wholesalers and jobbers of consumer durable goods are required to keep is being sent to them in a letter from the Office of Price Administration. In making this announcement, OPA explained that the letter, which is being mailed from District Offices, will go to manufacturers and jobbers of electrical household equipment, and other such commodities. Besides explaining that each firm is required to keep written records which clearly show how it determined its maximum prices, the letter also includes a simple suggested form on which a firm can keep its maximum price records.

These records are required of wholesalers and jobbers by the General Maximum Price Regulation and of manufacturers by Maximum Price Regulation 188. They are not new requirements, but have been a part of the General Maximum Price Regulation since it became effective in May, 1942, and of Maximum Price Regulation 188 since August 1, 1942, the effective date of that regulation.

Emphasizing the importance to the industry itself of keeping correct pricing records, the letter that is being sent from the District Offices states: "If properly prepared, these records are a convenience and protection to every business man. On the other hand, if a seller has not prepared and kept such records, he has no tangible evidence to show that he has taken the first step towards observance of the maximum price provisions of the regulation. For this reason, the obligation to prepare and keep records will be strictly enforced by the Office of Price Administration."

Item	Unrestricted Supply	Short Supply on Market	Present Essential Requirements
Mechanical Refrigerators	1,226,250	250,000	12,500
Water Coolers	19,000	Not Available	9,000
Walk-in Coolers	2,760	Not Available	920
Evaporative Coolers	100,000	Not Available	35,000
Dairy Refrigerators	4,020	Not Available	1,340
Display Cases	22,800	Not Available	7,600
Dough Retarders	1,800	Not Available	600
Reach-In Coolers	8,580	Not Available	2,860
Ice Refrigerators	150,000	150,000	
Electric Fractional hp. Motors, Replacement	Not Available	Not Available	150,000

Sterling Smith Resigns

STERLING SMITH, Chief of the Refrigeration and Air Conditioning Section of the General Industrial Equipment Division of the War Production Board has resigned effective August 1, 1944, WPB announced July 5.

Mr. Smith has been with WPB since September, 1941, administering regulations governing production and distribution of refrigeration and air conditioning equipment; rules governing distribution of freon, generally used in refrigeration equipment of all types, and regulations governing emergency service of refrigerating equipment.

Charles M. Stuart, who has been deputy chief of the Special Equipment Branch of the General Industrial Equipment Division, is succeeding Mr. Smith.

Mr. Smith is leaving Washington because of poor health. He is going to Chicago, after a vacation, to assume the managership of the Commercial Refrigeration Division of Mills Industries of that city. Prior to his association with WPB, Mr. Smith was with Nash-Kelvinator in New York.

Preference Ratings Clarified

RULES governing the application or extension of preference ratings have been clarified with the issuance of Interpretation No. 13 to Priorities Regulation No. 3, the War Production Board reported June 26.

When a preference rating is being applied, other than a blanket rating such as one assigned by Controlled Materials Plan Regulation No. 5, or when any rating is being extended for some purpose other than to replace inventory, it may be done only within a reasonable time after the rating was received. The general rule, according to Interpretation No. 13, is that more than three months is deemed to be an unreasonable delay in the use of a rating. However, in particular cases there may be circumstances which make a reasonable time shorter or longer than three months, WPB said.

The interpretation points out five specific cases to illustrate the application of specific circumstances to modify the general rules:

1. A rating assigned to a construction project on a form which indicates when a rating expires may be applied for material going into the project until the stated expiration date, even though more than three months may have elapsed. Such ratings are assigned on forms such as GA-1456 or CMPL-593.

2. A rating assigned in connection with an export license may be applied as long as the license is valid and expires when the license expires or is revoked. (For explanation of this rule see Interpretation 2, Directive 27.)

3. When a rating is applied to a long term contract (such as the construction of a ship), it may be extended for material needed to fill the contract, even though more than three months have elapsed.

4. If the purpose for which the rating was assigned no longer exists, the rating may not be applied even though three months have not elapsed.

5. When a rating is extended by a person to get material to deliver to his customer, or to incorporate in such material, the time within which it may be done will, in general, be controlled by the delivery date on his customer's order.

The interpretation finally points out that the mere fact that a person has not been able to get his rated order accepted by a supplier does not lengthen the time within which he may use his rating.

Maximum Prices Revised

THE regulation establishing maximum prices for services has been substantially simplified and reduced in size by a general revision and simplification of its provisions, the Office of Price administration announced July 1. At the same time, practically all services that previously were under the General Maximum Price Regulation have been brought under the revised services regulation. This includes refrigeration service.

Thus, most service suppliers need look to only one regulation in determining their maximum prices when the revision becomes effective August 1, 1944, except for Alaska, where it will become effective September 1, 1944. A 30-day period was provided between announcement of the revision and its effective date so that all service suppliers, including those brought under the regulation for the first time, may become acquainted with its provisions.

In general, few changes are anticipated in the maximum prices already established as the result of the revision, which retains the March 1942 base period of the old services regulation and the General Maximum Price Regulation. However, maximum prices determined on the basis of the price of a "similar" service, a competitor's offering price, or a price adjusted in accordance with

the seller's price differentials must be redetermined, since these pricing provisions have been deleted.

Because of the large number of services that are now covered in one regulation, the listing of individual services covered, which appeared in the old services regulation has been omitted from the revision. All services are now covered except those governed by specific regulations, three groups of services which are continued under the General Maximum Price Regulation, and those services excluded from price control. The three groups of services continuing under the General Maximum Price Regulation are: Transportation services of contract carriers; storage, warehousing and terminal services; and the furnishing of electricity, gas, light, heat, power or water otherwise than by a public utility.

It is now expressly stated that rentals of articles, not already governed by other price regulations, are considered "services" under the revised regulation.

All sellers under the original services regulation whose prices are changed by the revision, as well as all sellers brought under the revised regulation for the first time, must file a complete statement of their maximum prices with the proper War Price and Rationing Board within 30 days of the effective date of the revision.

In the case of violators of the regulation who do not file their maximum prices with their War Price and Rationing Boards, or who do not apply to OPA for ceilings, OPA may set ceilings for them in line with the regulation's provisions.

S S S

Pricing Rebuilt Small Motors

A NEW method for pricing rebuilt fractional horsepower electric motors, such as those needed now to run refrigerators and similar household appliances was announced June 21 by the OPA. Effective June 26, 1944, the new method will establish retail prices for rebuilt motors of ¾ hp. or less, at 75 per cent of the list price of the nearest equivalent new motor, plus an additional sum of $7.00, less the following allowance for the exchange, transfer or trade-in of used motor: $1.00 for ¼ hp. or less; $2.00 for over ¼ hp. and including ½ hp.; and $3.00 for over ½ hp. and including ¾ hp.

Example: A buyer trades in a used ¼ hp. motor on a rebuilt motor of the same size which lists at $12 when new. The maximum price for the rebuilt motor would be established by the following steps: (1) 75 per cent of $12 is $9.00, (2) $9.00 plus $7.00 is $16, (3) $16 less $1.00 trade-in allowance is $15, which is the maximum price.

S S S

Production of Small Motors

PRODUCTION programs for fractional horsepower motors are being met at present, members of the War Production Board's Fractional Horsepower Electric Motor Industry Advisory Committee reported to WPB representatives at a meeting in Washington May 29. However, the committee pointed out that additional motors probably will not be available for civilian use in view of the large military orders with which the industry is faced.

The supply situation with respect to standard A. C. fractional horsepower motors was discussed in detail. It was pointed out by committee members that this type of motor is the most critical of all types of fractional motors. It was also pointed out that manufacturers of standard A. C. fractionals have large backlogs of order. To remedy this situation, the committee recommended that use of the maintenance, repair and operating supplies (MRO) procedure for the purchase of such motors and products which require motors in their manufacture be limited.

S S S

Procuring Copper Tubing

PROCEDURES established for use by repairmen under Controlled Materials Plan Regulation No. 9A in obtaining materials may be used to procure only three types of copper or copper base alloy tubing or pipe from brass mills or brass mill warehouses, the War Production Board said June 29. At the same time, a quarterly limit of 2000 pounds of copper tubing has been imposed on amounts of this material which one distributor may sell to another distributor.

The three types of copper tubing which repairmen may obtain from brass mills or brass mill warehouses are:

(1) Seamless copper tubing soft in coils or in straight lengths of an O.D. (outside dimension), gauge and type commonly sold as automotive tubing;

(Continued on page 52)

Servicing General Electric CA Machines

SECOND ARTICLE—Continued from June Issue.

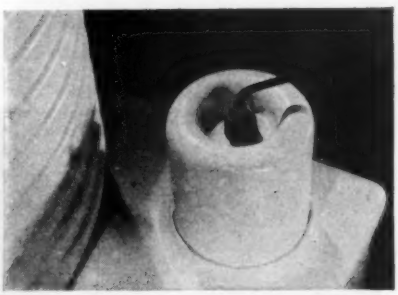
The first article in this graphic presentation of servicing the General Electric CA machines covered the first fifteen operations. The installment in this issue continues with operations 16 to 33 inclusive.

This picture story presents recommended methods for field service of the General Electric CA refrigerating machines taken from an educational film produced by the General Electric Co. This presentation will provide a better understanding of the operations of this machine and methods of diagnosing and correcting troubles.—Editor.

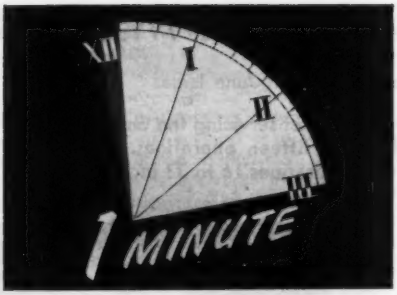
(16) Open the purging screw just a crack to check for outward pressure. If the oil is sucked in, close the purging screw quickly and heat the machine some more. When there is outward pressure—

(17) Bleed for three minutes at the proper rate.

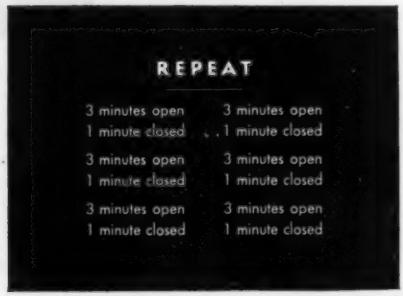
(18) Leave the purging screw open about 1/16 of a turn. Bubble the non-condensable gas through the oil as fast as possible without blowing out all the oil. Another check on the proper rate is by odor: With your nose six inches above purging screw, the rather sweet odor of Methyl Formate should not be noticeable.



(19) The rate of bleeding is very important. It must not be too fast or refrigerant will be lost. Also much of the non-condensable gas will remain in the machine. Continue to bleed for three minutes, and check the rate frequently.

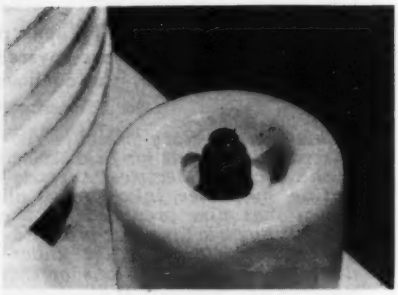


(20) Then close the purging screw for about one minute. This allows the non-condensable and refrigerant in the float to separate so that no refrigerant is lost when the purging screw is opened again.

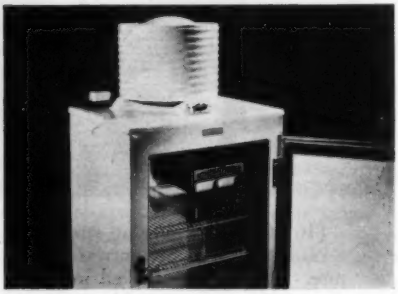


(21) Repeat the three minutes open, one minute closed, cycle until all the non-condensable gas has been removed.

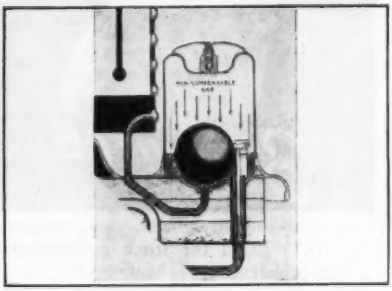
(22) You know all the non-condensable is removed when the float valve is warmed to the same temperature as the condenser. Thirty to forty-five minutes of bleeding may be required.



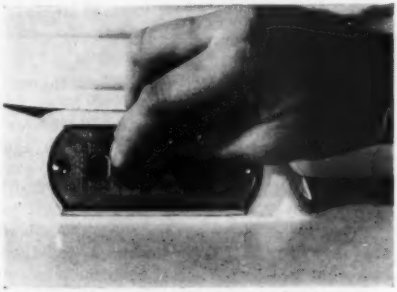
(23) When finished, close the purging screw tightly and check for a leak. Do this by putting more oil in the purging screw socket and watching for bubbles.



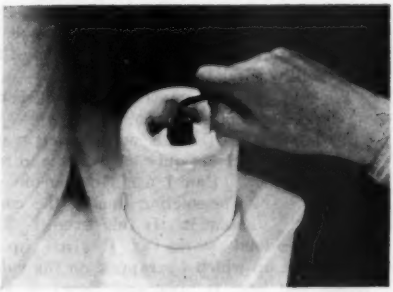
(24) So far, we have covered a normal case of non-condensable gas trouble in the CA machine. Now let's consider the effect of room temperature, and machines that stall and trip off the overload.



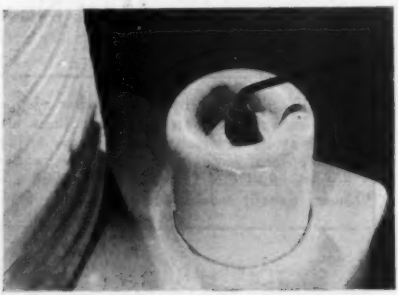
(25) With some non-condensable in the float, the operation of the machine in a warm room may be reasonably satisfactory. In a cold room the same machine may give considerable trouble. The reason is this: In a cold room the internal pressure that forces liquid refrigerant into the float valve is low. The opposing pressure of the non-condensable, preventing liquid from entering the float, is enough to cause trouble. This is one reason for erratic operation.



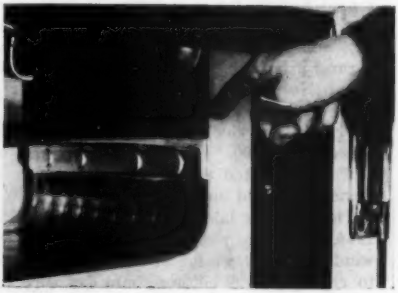
(26) Sometimes a machine will have so much non-condensable gas, that it will stall and trip off the overload. The problem here is how to get the machine hot so that it can be bled.



(27) To do this and to determine definitely whether non-condensable is the cause of the stalling, put oil in the purging screw and open it just a crack. If the pressure is outward, you know the cause is non-condensable gas. The machine should be bled. Let the non-condensable bleed through the oil until the machine can be kept running. Then heat it and proceed with the normal bleeding instructions.



(28) Leaks in a CA machine usually show up as non-condensable gas. Because of the low pressure, air is sucked in, instead of refrigerant leaking out. Bleed the machine completely the first time. If the trouble occurs again within a few months, there is probably a leak. Bleed it once more. If no refrigeration again develops, you know there is a leak. A replacement is in order.



(29) A low refrigerant charge is usually caused by improper bleeding. Too much refrigerant has been lost. The frost line will be low, particularly on the right side of the evaporator. However, be sure the low frost is not due to non-condensable gas or to a bad oil conditioner.

(To be Continued)

Service Pointers

Practical Service Men Tell How They Meet New Repair and Service Problems

UNDER this department a number of practical service men show a commendable cooperative spirit in passing on to others information on special repair and service problems that may be of much value in these trying times of material scarcity and shortage of competent help. We believe if more readers would send similar contributions, making THE REFRIGERATION SERVICE ENGINEER a medium for the exchange of information on service, much benefit would accrue to all. Similar contributions are solicited from all readers.

SO YOU THINK YOU HAVE TROUBLES?

EDITOR:—I have been reading THE REFRIGERATION SERVICE ENGINEER and ICE AND REFRIGERATION for over four years. I have been working for a long time on big stuff, Ammonia plants and CO_2 plants—over 100 tons on a ship going to South America in the Banner boats back in 1918-22. I am a licensed engineer in New York City. I also went to the Y.M.C.A., W. 63 St. school in July, 1939. My instructor was L. K. Wright (it was the best thing I ever did).

My story is this: I happen to own a Frigidaire SO_2 high side float refrigerator. I paid $150.00 for it in 1936. It is thermostat controlled. It was a good box in its day and it is fairly good now. This box sprung a leak in the evaporator last winter about November 1943. I shut it off and pumped down the evaporator. I called a Frigidaire service man to fix it, and he asked for $65.00. I called another company and they wanted $95.00. That is a lot of money to spend on a $150.00 box.

The box was laid up until spring in May 1944. We were putting the food out on the window sill all winter and my wife started to cry again. Well, we could not buy another box now. The food got bad on the window, so my wife said to me, "What did you learn at the Y.M.C.A. in 1939?" I told her all about refrigeration. She said, "Well, you better start fixing that box or pay $75.00 and have it fixed as I must have an icebox in the house because the food is going bad." I said, "O.K., dear." I got my Y.M.C.A. books out and also the kit of Bonney tools I received with the course. I started trying to buy parts and things at refrigeration supply stores in New York City. They did not have any parts for a Frigidaire. I went to a Frigidaire agent and he wanted $40.00 for a rebuilt evaporator, with the old one traded in. Well, I could not see it.

I started to read my Y.M.C.A. books again. I came across a book by L. K. Wright which told me how to make a complete refrigerator. I was saved! The part I built was the evaporator. I built a wooden form 5½ x 6 x 12 in. and wrapped a sheet of aluminum and 50 ft. of ⅜ in. copper tubing on the wooden form. I did this job in four or five hours and had a refrigerator working again at a total cost of $4.50.

The box is running for a month now. The room temperature is 70° F., back pressure is 0 lbs., head pressure 95 lbs., box temperature is 35 to 38° F., and the ⅜ in. coil of the evaporator is frosted three-fourths of its length all around.

I lost about four ounces of oil and some refrigeration charge in doing the work. I can't buy SO_2 as there is no cylinder available for me as I am only an owner and not a service shop. Can I use Herveen on an SO_2 system? The suction line to the compressor gets ice on it. Is this wrong? The high side float works as I wired up a radio pick up which I strapped on the valve and I can hear it open and close. I also can hear the check valve on the evaporator open and close and I can hear the compressor valve open and close. It is a 2-cylinder Super job.

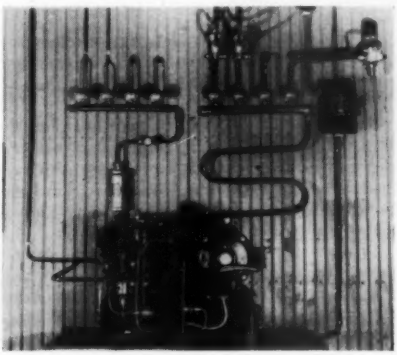
I get a full ice coil on the evaporator by adjusting the thermostat bulb along the evaporator coil. Where shall I locate it?

Well, so long and I hope to hear from you. My wife is happy now. I wonder if I am O.K. I will be reading the REFRIGERATION SERVICE ENGINEER and ICE AND REFRIGERATION just the same.—C. D.

It seems that Mr. C. D. has the situation well in hand and most important of all his wife is happy once more.

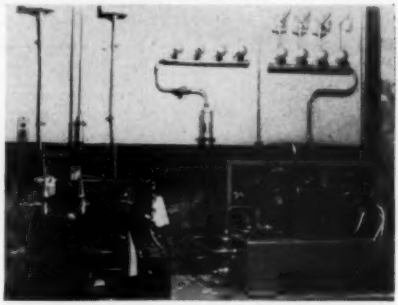
I would not suggest that any attempt be made to change the refrigerant in this unit

(Continued on page 52)



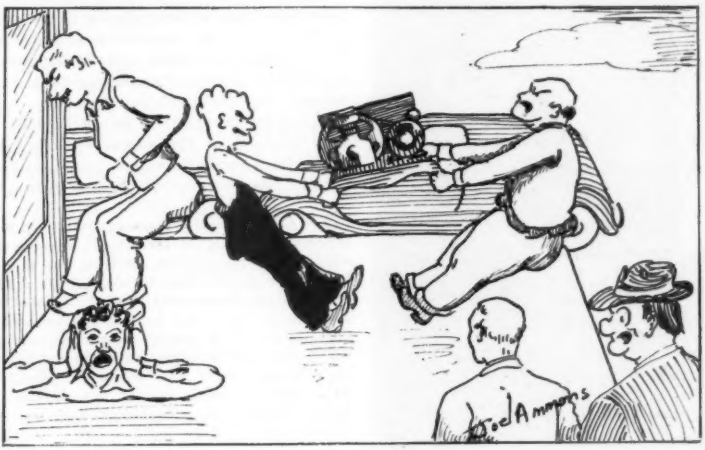
NEAT INSTALLATIONS PAY

NOTICING pictures of installations in recent issues of THE REFRIGERATION SERVICE ENGINEER with tubing crisscrossing and valves located promiscuously on walls, a correspondent from Winona, Minn., Ed Kurtzman, says he finds that if pains are taken to make a neat installation, it proves more satisfactory from both an appearance and an operational standpoint.



Accompanying are pictures of two installations made by Mr. Kurtzman's firm in Winona. For several years he has made a practice of taking pictures of all installations made and he now has quite a collection.

There's a Lot of Friendly Rivalry Between These Two Firms



Training Refrigeration Technicians for The Army

Story of Its Accomplishments in Furnishing Refrigeration Technicians

By Major Raymond C. Gunther, Quartermaster Corps
Officer in Charge Refrigeration School
Army Service Forces Training Center, Camp Lee, Va.

THE sciences based on phenomena and practical or mathematically proven theory have long been employed by man in his unceasing efforts to establish better and more comfortable modes of existence so that he might thus achieve a more abundant life.

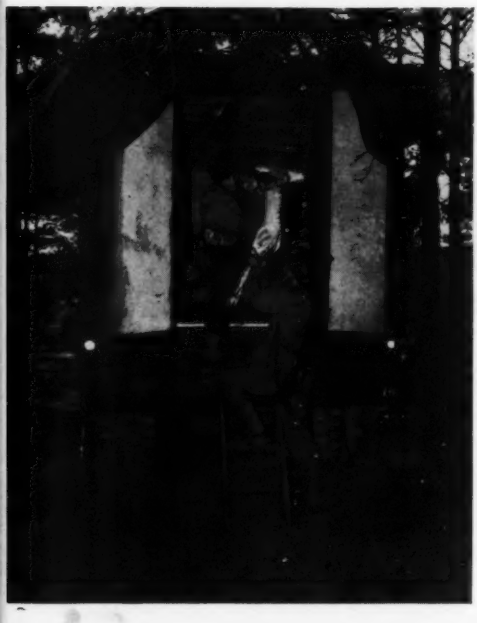
The successful culmination of experiments carried on in the development of the various phases of science have necessitated a thorough knowledge of involved principles of natural actions and reactions by the experimenters. We know these experimenters as scientists. They may be doctors of medicine, chemists, astronomers or physicists, depending upon the nature of their endeavors, but their efforts are all based on one or more series of facts or phenomena and/or a combination of both, depending upon the complexities of the subject under research.

From our earliest history man has shown a great interest in the development of better and more convenient ways of accomplishing that necessary work which was required, not merely for existence, but for a more comfortable living.

One of the earliest problems foremost among the requirements for existence was, of course, that of obtaining food. But once obtained there remained the equally important problem of storing it against the day when its sources were temporarily eliminated for various reasons. Thus there arose the necessity for investigating a method for the storage of such foods which resulted in the first step of that science which we have come to know as refrigeration.

Since those early days when food was placed in caves in order that it might remain edible during the required storage periods, many strides have been made in the development of the science that has resulted in our present day refrigeration methods.

This forward progress has been made possible because of the research development made in Thermodynamics, gases and machinery, the basis of which owe their begin-

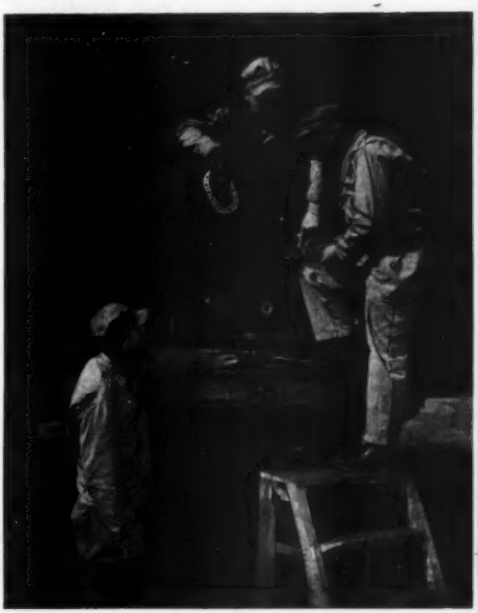


Two Quartermaster trainees are shown unloading a carcass of lamb from a refrigerated trailer preparatory to issue for ration breakdown during field training at the A. P. Hill Military Reservation, Va. Refrigeration trainees of the Army Service Forces Training Center at Camp Lee, formerly designated the Quartermaster Replacement Training Center, spend two weeks in intensive field training following the completion of basic military and technical training at Camp Lee.

Soldiers in the Quartermaster Refrigeration School of the Army Service Forces Training Center at Camp Lee, Va., are adjusting portable Freon equipment. Left to right are Cpl. Virgil P. Warren, Pvt. Jack G. Bowman, and Pvt. Willard S. Marlow. Cpl. Warren was employed in civilian life by The Warren Co., Inc., Atlanta; Pvt. Bowman was with the Coca Cola Co. of Atlanta; and Pvt. Marlow was with the Mayfield Refrigeration Service in Atlanta.

ning to scientists from distant parts of the world, many of whom were not contemporary and whose fields of endeavor were remote from each other. The discoveries of one in many instances formed the foundation for later discoveries by men of research of later periods and every proven scientific fundamental, including those which govern refrigeration, may be classed not as an isolated independent discovery springing from the research of a single individual, but rather as the result of prior discoveries, plus a recognition of their significance and the ability to properly co-relate. The final result can, therefore, be attributed to that which is the sum and result of past and present discoveries.

Out of all of this there eventually appeared a tangible "something" that could be used in a practical manner to serve and benefit man. But in order to fully understand this tangible "something" and take advantage of its potentialities, a deep knowledge of the fundamental principles developed over this long period of time must be thoroughly comprehended. As a result institutions of learning have been organized in order that individuals may take advantage of the results of the labors and research of those who have gone before and also of those who still search.



Three trainees attending the Refrigeration School of the Army Service Forces Training Center at Camp Lee, Virginia, are shown working on the power unit of a mobile refrigeration trailer. They have removed the head of the compressor preparatory to inspecting the discharge valve plates. They are left to right: Private Bernard S. Dreis of Minneapolis, Minn.; Private C. W. Thomas of Jacksonville, Fla.; and Private Charles S. Wallace of Hudson, N. Y. Private Dreis was employed in the ammonia plant of Purity Bakeries, Inc., Minneapolis, before entering the Army. Private Thomas was previously connected with Floyd-Hopper in Jacksonville, while Private Wallace was with Parker's Carbonated Beverages, of Hudson, N. Y.

These students in our institutions of learning have applied themselves well and have further benefited civilization with their contributions. It must be remembered, however, that these students devoted themselves to study over a period of years in order to grasp the meanings of those proven fundamentals and principles which have come to form the basis of our practical science and were able to study leisurely and without interference.

Then came the day, December 7, 1941, when our nation was attacked without warning and those leisurely methods of teaching and studying ceased and our tempo increased in proportion to the blast of the bombshells which brought them to an end.

In order to meet the war emergency and successfully cope with our enemy, it was necessary that the manpower capable of performing the duties incident to the successful maintenance and operation of all equipment of war be supplied from the citizenry of all walks of life. In addition it had to be made available in such numbers as precluded the hope that men suitably trained to fill the requirements for such work were already obtainable in sufficient numbers.

Technicians to Be Educated

The needs of the Army were and are for practical men who can operate and maintain this equipment in the field under adverse conditions and who, in their maintenance, must be able to do much improvising in order to keep machinery operating.

The Army cannot provide the time during this emergency to allow selected individuals to delve into the intricacies of science that has provided this type of equipment. Yet the necessity exists for educating the prospective refrigeration technician to a knowledge of the essentials he must be familiar with if his work is to be properly done. This task has been a stupendous one and has resulted in the preparing of Army school curriculums so as to eliminate much of the details but leave sufficient content to provide the student with a proper basis for the analysis of operating difficulties so that he is able to keep equipment in operation.

The result of all of this is our present program for the training of Quartermaster refrigeration students at the Army Service Forces Training Center, Camp Lee, Virginia, formerly designated as the Quartermaster Replacement Training Center, where men of varying degrees of prior experience in refrigeration are sent to study in order to furnish necessary manpower to fill the Army's requirements in refrigeration.

Since refrigeration is a complex subject, the Army technician forms a relationship with the scientist in the necessity for understanding the laws of natural phenomena as written by Dalton, Pascal, Boyle, Charles, Gay-Lassac, and others. Even though the names of their discoverers may not long remain in the memories of the students after leaving the school, their principles must, for who but those of thorough understanding could diagnose difficulties in the refrigeration system?

Magnitude of Task

This task assumes a magnitude of vast proportions when we consider that the Army seeks in the short time allotted to create an efficient practical refrigeration technician. Distinction may not be the reward of all our students and we do not claim that all become skilled technicians but we have succeeded in providing the foundation upon which the student can build and which, with additional experience, will provide the Army with enough personnel to meet its needs.

The day has long passed when Alexander the Great detailed soldiers to carry snow from the mountains in order to cool his wine. Armies also have so increased in size as to eliminate the possibility of furnishing fresh foods to its men by capturing the enemy's livestock and produce as was true up to as late as our own Civil War.

Today foods are preserved in fixed cold storage plants located back of the fighting zones, and are transported to the fronts by means of mobile refrigeration trailers, each equipped with a refrigeration unit capable of maintaining sufficiently low temperatures within the storage compartment of the trailer to preserve such perishable items as meats, dairy products, and vegetables for consumption by the fighting men. It is this part of the system of supply in which the refrigeration technician is most vitally interested and it is to prepare him for the maintenance and operation of this equipment that is the goal of the Quartermaster Refrigeration School at Camp Lee.

The program, as finally developed at the Refrigeration School, is meeting its objective. The course is divided into two principal parts, namely, two weeks of classroom instruction and six weeks of shop practice, a total of eight weeks.

In the two weeks of classroom, the student is taught the fundamentals of the refrigeration cycle, properties of refrigerants, insulation material, diagrammatic principles of equipment such as electric motors, compressors, condensers, evaporators, service and expansion valves, heat exchanger and liquid receivers.

From there he enters the shop where he receives instruction and performs practical work in welding, bending and flaring of copper tubing and use of tools. His education is continued with the assembly and disassembly of the various necessary valves, condensers and evaporators used on mobile and fixed refrigeration plants.

Service Problems Studied

The high spots in the training of students come during their sixth and seventh weeks when service problems are studied. These problems consist of finding the source of troubles that have been developed by the instructors and which are unknown to the student upon starting his investigation.

It is felt that this method of training develops a natural ingenuity in the student and also emphasizes many of the principles which he must understand in order to diagnose operational difficulties. Most of this work pertains to the mobile refrigeration unit of which there are several manufacturers' equipment involved and upon which the majority of the students will come in contact with after finishing the course.

During the eighth week of instruction most of the student's time is spent on the three-and-one-half ton ice plant that is operated within the school. This plant employs ammonia as a refrigerant and gives the student some diversification in refrigeration plant operation aside from the freon systems which are predominant in the mobile unit field. Sulphur dioxide and methyl chloride systems are also included in the student's training.

Dispersed throughout the course in logical sequence, the student is instructed and performs some work on insulation materials and cold storage room construction, knowledge of which will benefit him if he is ever in a locality that requires the building of cold storage rooms out of whatever natural materials may be available. And since mobile refrigeration units are operated by means of small gasoline engines, a brief period of instruction on such equipment is also given.

In order to affect a better portrait of principles and fundamentals surrounding the science of refrigeration and concentrate this mass of information, an ambitious but efficient visual aid program has been organized at the school. These visual aids include diagrammatic charts as well as moving models which simulate actual operations of the intricate equipment involved. These have been found highly successful for the purpose for which they were intended. Not only should the ingenuity of the student instructors of the Army schools be credited for the success of this visual aid program, but credit must also be given to industry for its cooperation and help in overcoming this problem.

When the scope of the details covered in the course on refrigeration, as described above, is realized, it may succeed in providing a picture of the tremendous task it has been and continues to be to provide efficient service in maintaining the fighting forces in the field.

Provides Technical Pool

It is our firm conviction that the training and experience students receive not only at the Quartermaster Refrigeration School at Camp Lee but at all Army schools will not only benefit the nation in time of war but will also provide a pool from which industry may draw required personnel with some technical background both in the service field and in the manufacture of all types of equipment to be produced in our immediate post war era.

In the contemplation of the many advantages both to the nation and the individual soldier, in time of war and in time of peace, the Refrigeration School faculty finds ample satisfaction and justification for its untiring efforts. Inquiries have already been received from manufacturers of refrigeration equipment requesting lists of names of men who can and will find jobs in their service and sales organizations when the firing ceases and peace is once more restored to the world.

S S S

R. A. McCaghren,
Columbus, Ga.

I have been a reader of THE REFRIGERATION SERVICE ENGINEER for a long time and think it one of the best publications of its kind. I have received the price of a year's subscription out of one copy several times.

Appliance Industry Asks WPB to Place Ban on All New Models

THE refrigerator and washing machine industry advisory committee, according to a news report, has recommended to WPB that when production of civilian major appliances is resumed, each company's output should be restricted to its 1942 models. The effect of the recommendation, if adopted, would be to rule out new producers, at least during the initial phase of the reconversion period.

Shortages of small motors, raw materials and manpower are expected to prevent reconversion in major appliances for at least a year, and then only on a partial basis. Refrigerator manufacturers are understood to feel that it would be distinctly unsound and unfair to permit new producers to invade their field during the early stages of the transition period when materials and components are scarce.

Furthermore, since the research manufacturing facilities of manufacturers are fully occupied with war work, it would be unfair to allow prospective producers who are not thus handicapped to obtain early approval for making new models the committee believes. Issuance of permission by WPB for the manufacture of jigs, tools and dies for new models would also be wasteful and would detract from the war effort, it was pointed out.

Opinion of Refrigerator Manufacturers

Looking toward transitional and postwar problems, the following is a consensus of refrigerator manufacturers:

1. Production should not be consumed until an annual production of as many as 1,500,000 to 2,000,000 units can be assured. The civilian backlog is estimated at 6,000,000 refrigerators. Unless a sufficiently high production rate is allowed initially, production costs will be abnormally high. Furthermore, a low initial rate might make it difficult to control black market sales at inflated prices.

2. While some bottleneck machine tools should be provided in advance to established manufacturers, such relaxation of WPB controls should not be permitted to enable new producers to tool up during the period when materials and manpower are still scarce.

3. Productive capacity of the refrigerator manufacturing industry has been increased during the war by the construction of new plants. In addition, a trend toward diversified appliance lines may result in certain appliance manufacturers entering the refrigerator field. In view of such prospective expansion by companies which have had prewar experience in appliance merchandising, new producers who seek to enter the field are likely to find that competitive distributional problems will be formidable. New dealers will be available, but many will be inexperienced and the business mortality may be high, it is felt.

Lack of Sales Organization

Lack of effective marketing organizations is expected to act as a curb on the number of new producers, even if WPB permits unrestricted production early in the reconversion period. The difficulty of developing a strong sales organization, coupled with the intricate marketing problems in the appliance field, is expected to discourage entrance into the field by some new producers. Established producers point out that severe competition in the refrigerator industry was largely responsible for the reduction in the number of manufacturing units from over 200 in 1926 to only 15 in 1942.

If permission were granted by WPB for new producers to enter the appliance field at the outset of reconversion, the new manufacturers may include a number who merely would be seeking to scalp the market during the period of temporary shortages, it was charged. Dealers and consumers are expected to be wary of brands offered by some of the newcomers, since the withdrawal of the latter, when competition becomes intensified, would create severe servicing problems for owners of such appliances.

The 1942 models offered by the established producers may be modernized some-

(Continued on page 52)

COMMERCIAL

INCREASE BUSINESS BY DOING A MORE EFFECTIVE JOB OF SELLING *Selling*

Service Shop Expands Business Through Selling Used Equipment

THROUGH his service contacts, W. M. Tittle, proprietor of Electric Appliance Company, of Laurel, Miss., has sold much used equipment, putting it where it was needed worst.

When the war came on Mr. Tittle was servicing only refrigeration equipment sold by himself. But he broadened out to include all makes and brands and now the city could hardly do without him, especially in the commercial refrigeration field, as his is the only service shop hereabouts.

Mr. Tittle said he did not go 100 per cent into service in order to make money off labor, as he does not, charging a nominal fee of $1.50 per hour. However, he has found the contacts invaluable in selling and exchanging used equipment, often enabling him to serve customers in critical need of equipment.

Exchange Service

First, he fixed up a basement full of old equipment he had on hand when the war came on. He sold that first. Now he operates a sort of exchange service as between his customers. Suppose he finds one customer with a motor, a drink box, an ice cream cabinet or a walk-in cooler which he has set aside. He buys it, reconditions it and resells it. On account of his frequent service connections he is constantly unearthing such equipment. Some of it the owner hardly knew he had. If the owner prefers he will sell it for him on a commission, but the idea is to get the equipment into the hands of the restaurant, the dairy or the drug store which needs it badly.

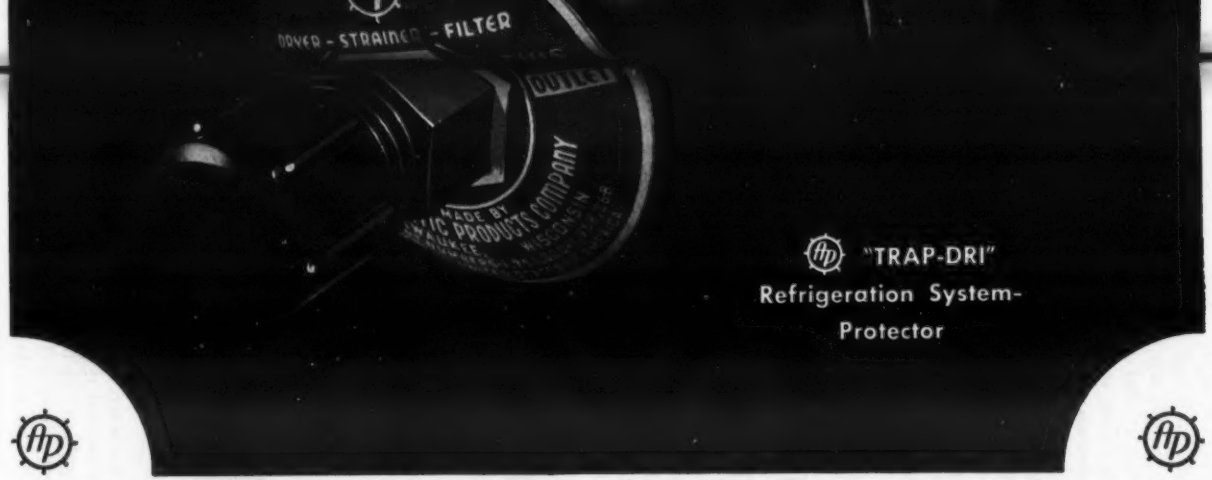
Parts Sold Also

Besides his considerable traffic in used equipment, Mr. Tittle said his service contacts had enabled him to sell a world of parts such as controls, expansion valves, gaskets and the like. His stock of motor bearings and parts is one of the most complete in Mississippi and he keeps on hand 35 to 40 service motors from 1/6 to 3 hp.

"We are delighted to say not one pound of perishable food has been lost in our territory for lack of service or parts," he said. "We are on the job 24 hours a day and our head service man keeps a truck with him 24 hours a day."

Dependability doesn't happen...

IT'S *BUILT INTO* EVERY AP VALVE



Troublesome moisture, gummy deposits, scale, dirt, solder particles and other impurities CAN'T affect your refrigerating efficiency—with an A-P "TRAP-DRI" in the refrigerant line!

The first device on the market that combines *both* an efficient filter and an effective dryer, the "TRAP-DRI" offers 100% protection, permitting smoother valve operation and preventing freeze-ups.

The filter element is as effective as a 900-mesh strainer—yet with *no appreciable pressure drop*. The Silica Gel is 1½ to 2 times more effective than other dehydrating agents.

The A-P "TRAP-DRI" belongs on EVERY refrigeration system! It's easy to install.

AUTOMATIC PRODUCTS COMPANY

2454 North Thirty-Second Street • Milwaukee 10, Wisconsin

Export Dept.—13 E. 40th St., New York 16, N. Y.

DEPENDABLE
REFRIGERANT VALVES

Stocked and Sold by Progressive Refrigeration Jobbers Everywhere — Recommended and Installed by Leading Refrigeration Service Engineers.

The Tittle shop is equipped for all kinds of refrigeration work, also for all motor repairs except rewinding. Equipment includes acetylene welding apparatus, a 5-foot lathe, electric drills, buffers, grinders and paint spray gun. In charge of the shop is J. C. Hamilton, member of the Refrigerating Engineers Society.

Mr. Hamilton said he preferred to bring crippled equipment into the shop rather than repair it on the spot. This enables him to have all his equipment handy, he doesn't litter up the customer's floor and furthermore he can test out the equipment after it is repaired. The shop is on ground level, so that a truck can drive right in and load or unload. The shop is used for a garage at night.

Mr. Tittle said he had been able to sell considerable new equipment on priority to customers who could show need. He supplies dairies and farmers engaged in food production and plants engaged in war work. He is confident that his service contacts will give him a head start in selling new equipment after the war. He knows his customers, knows what old equipment they have and he has their confidence. Already some of them are wanting to place advance orders with him and he may begin taking them soon.

New Home Freezer Units Are Designed to Meet Post-War Demands

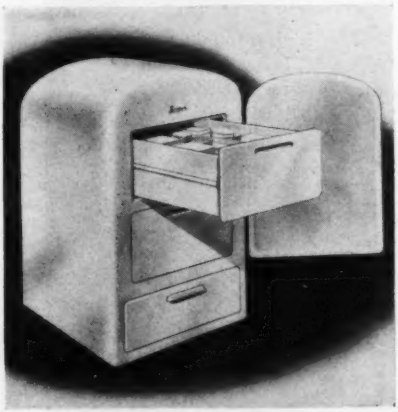
THE continued interest in home freezer units has stimulated a number of cabinet manufacturers to lay their plans for producing cabinets to meet this demand. It is quite likely, therefore, that as soon as materials for their manufacture are available a huge market for these units will be opened.

This, in turn, will open up a sales and service opportunity for refrigeration service companies. Description of units made by two manufacturers are presented here to provide service men and others with an idea as to what will be available as soon as materials for their manufacture can be obtained.

SEEGER HOME FREEZING CABINET

The Seeger Refrigerator Company of St. Paul, Minn., through Walter G. Seeger, president, has announced a modern streamlined freezing cabinet for post-war use, in addition to its line of commercial refrigerators. This company has been manufacturing refrigerating cabinets for home and commercial use for nearly fifty years.

Mr. Seeger says they have made an extensive study and survey as to the type of freezing cabinet the housewife will want and need following the war. From these studies Seeger engineers have designed a cabinet for home and farm use that will have the greatest functional value.



Home Freezing Cabinet, Seeger Refrigerator Co.

Experience, they say, shows that the most popular demand is for the six cubic foot cabinet. A convenient feature of the Seeger cabinet will be three pull-out drawers, two for freezing and storing foods and one for storage only.

ESCO FREEZER-STORAGE CABINET

The Esco low temperature freezer-storage cabinets were made by the Esco Cabinet Co., West Chester, Pa. These cabinets were manufactured especially for farm use until temporarily discontinued by Government regulations.

The popular models have been the "FT" and "FTD" lines in 16, 24, 32 and 40 cu. ft. These are combination models with separate low temperature freezer storage compartment equipped with fan and one or more compartments for zero degree storage of frozen foods. With some possible modifications, it is this type of equipment, according to the manufacturer, that will be available in the post-war period.

In addition, low temperature storage cabinets will be available for people who have access to commercial frozen foods or who wish low temperature storage facilities available at their homes to supplement their use of freezer locker service. These cabinets also would fit the needs of stores, restaurants, cafes, hotels, hospitals and other institutions, and in fact for all those who use or store frosted foods.

These cabinets come in deluxe and standard models. Deluxe models are equipped with low temperature hard rubber lids of the double sealing type, with lid openings lined with rubber collars. Standard models have swing lids with double gasket for double sealing. Stainless steel tops furnished on deluxe models when desired. All models have Dole plate coils with holdover capacity.

Esco Cabinet Co., West Chester, Pa.

Specifications

Cabinet body: Heavy galvanized 18 gauge copper bearing steel inside and out. Five inches of insulation in walls and bottom. Cypress skids and top framework sealed inside of cabinet wall. Divided top scuff plate with breaker strips.

Unit mounting: Models "8-L" and "16-L" have unit compartment 22 in. x 30 in. on left end. All other "-8," "-16" and "-24" models (except "F-24" and "FD-24") have unit mounting space 17 in. x 24 in., or larger, on top.

Freezer models: All "FT" and "FTD" as well as "FTC" and "FTCD" models have separate freezing compartment on left end with extra coil, wire shelves, and blower fan (110 v 60 Cy. S.P. A.C. motor) and duct for controlled air circulation for rapid freezing. Models "F" and "FD" also are designed for freezing and are equipped with blower fan, with interior of cabinet arranged for complete air circulation.

Exterior: Gray enamel finish. Made of heavy galvanized metal specially treated for paint adherence.

Capacity and other details of the Models FT standard and FTD deluxe combination freezer-storage cabinets equipped with freezing compartment with extra coil, wire shelves, electric fan, and special duct with controlled air circulation for fast freezing, are shown in the table below:

Model	Cubic Feet Total	Freezer	Storage	No. of Lids	Long	Wide	High*
16	16	8	8	2	66½	35½	31½
24	24	8	16	3	90½	35½	31½
32	32	8	24	4	114½	35½	31½
40	40	8	32	5	138½	35½	31½

*Deluxe models with hard rubber lids are one inch higher.

The Question Box

Readers are invited to send their problems pertaining to the servicing of household refrigerators and small commercial refrigerating equipment to "The Question Box."

CONTROLLING LOW TEMPERATURE STORAGE

QUESTION 607: Will you please advise how to properly control a low temperature storage house which is kept at minus 20° F. using a thermostat inside the storage box? I should like to have the thermostat in series with the pressure control if this is O.K.

Will you please advise also what your best recommended settings are for the pressure control at its cut-in and cut-out points? Also, can the same control be applied to a two-stage compressor operating the box at the same temperatures?

The suction of the compressor in this box is to be held at minus 40° F. and the suction of the floor unit is to be held at minus 38° F., if possible. Do you have a table showing the correct sizes of Freon piping for these low temperatures or can you refer me to a book in which I can find such tables? If not, can you give me a correction factor for determining the proper size of liquid and suction line for these low temperatures as compared to a standard suction of 40° F.?

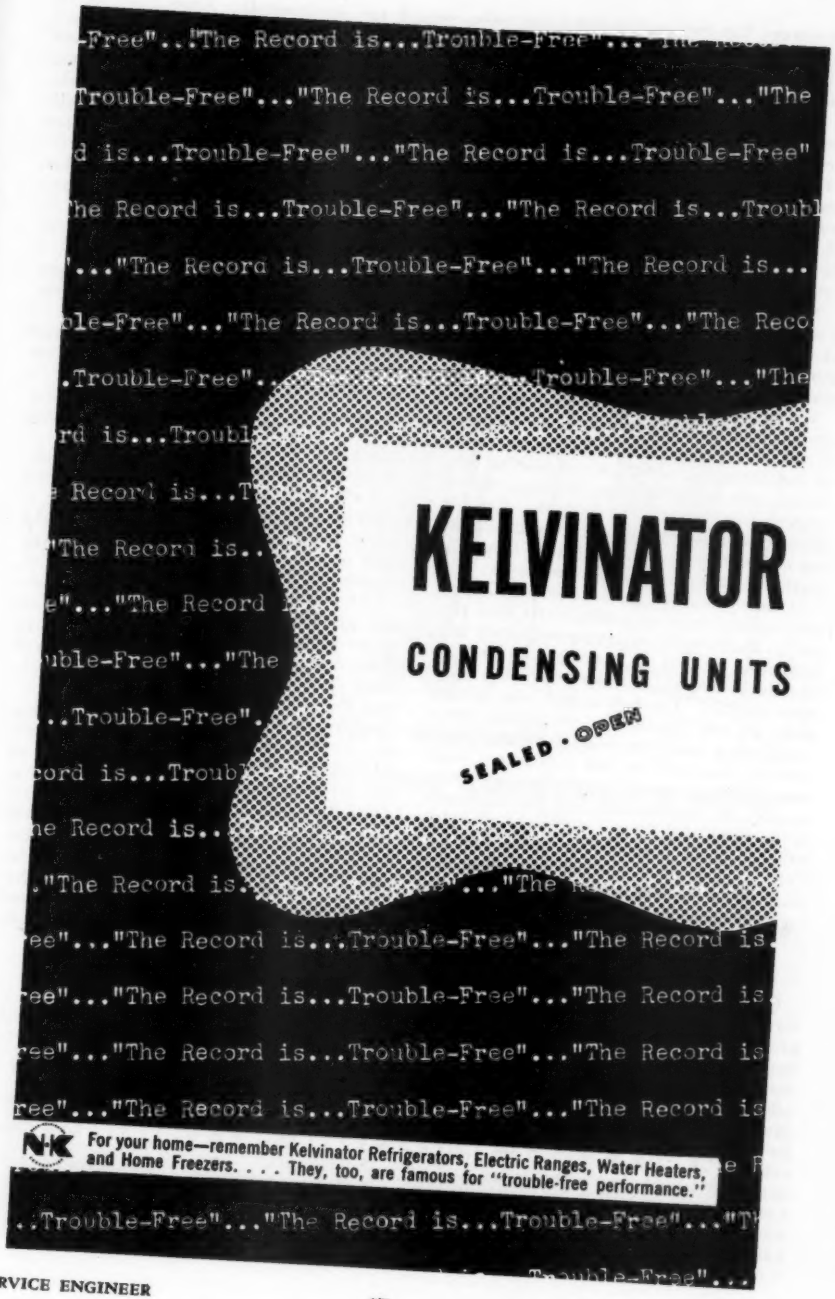
ANSWER: It is my opinion that a low-temperature storage house can be controlled through the use of a thermostat in series with a pressure control. This combination is used in all types of systems. The arrangement is such that the thermostat actually controls the temperature while the pressure control acts more as a safety cutout. In other words, the pressure control will be set approximately two to four pounds lower than the average cutout setting of the thermostat, thus preventing the compressor from ever being forced to pump too low a vacuum.

Occasionally, where a sudden load has been placed on the refrigerated space, the machine will be required to run an excessive period and through this excessive running, the coil may have the inclination to frost more than usual or it may create such a low evaporator temperature that too low a vacuum is pulled on the compressor. Where such conditions exist from time to time the pressure control will stop the machine at a definite pressure and then start it again after the evaporator has warmed sufficiently to raise the back pressure to the starting point. The thermostat during this period will very likely remain in the "On" position. The machine may start and stop several times on the pressure control before the thermostat has been satisfied. This same control arrangement can be used on two stage compression systems, as well as on single stage.

I do not have a table showing the correct sizes of suction lines for Freon refrigerant where such low temperatures are being maintained. We do have a table showing the pressure drop in pipe lines for Methyl Chloride but the lowest temperature shown is — 20°. However, the method of calculating these pipe line sizes, or I should say the pressure drop in the pipe lines, is also given in this article and may be the means of obtaining the information you want. This table and method of calculation was included in an article in the January, 1940 issue of THE REFRIGERATION SERVICE ENGINEER. I am sure you must have this in your file.

TESTING COMPRESSORS

QUESTION 608: Here is a problem I run into in overhauling Copeland compressors and it may be true of other makes also. In testing with gage to see if the low or suction side of the old Copelands are tight, very often my high-side gage crawls higher and higher slowly. After installing a new seal, tightening all bolts, new gaskets, etc., and doing everything possible, the high-side gage still creeps up. You probably would say I overlooked something on the low side. However, on this occasion I replaced the discharge flapper after lapping in seal and therefore the high-side gage did not climb. Why did this happen inasmuch as the original flapper seemed to work and hold perfectly? This is not an isolated case, it has happened several times. I can appreciate that in testing for any low-side leak by means of the so-called bubble test, bubbles sometimes appear even though the low side is tight due to faulty flappers.


KELVINATOR
CONDENSING UNITS
SEALED · OPEN
For your home—remember Kelvinator Refrigerators, Electric Ranges, Water Heaters, and Home Freezers. . . . They, too, are famous for "trouble-free performance."

ANSWER: The only explanation I can make of the fact that your head gauge continues to climb while testing Copeland compressors is the same old fact that a compressor should be permitted to pump on a vacuum for as much as a half hour before final leak tests are made.

I take it for granted that in testing these compressors, you pump them down to as near a perfect vacuum as possible, then close off the discharged side and insert a gauge at the discharge port to determine whether or not the pressure builds up.

Nearly all compressors will continue to pump a little air or condensable gases out of the oil and the pores of the metal for some little time after the compressor is started.

If you are using the bubble test, the compressor will continue to bubble for perhaps a half hour before it will finally test O.K. If the discharge valves are not holding perfectly, this bubbling may continue for a longer period because naturally the efficiency of the compressor is reduced when the valves are not perfect, and it would take longer to reach the minimum vacuum required.

If during this process the discharged valve was repaired making it hold better than formerly, the compressor may pump down to a minimum vacuum in a much shorter time and the indications of leaks would stop much more rapidly. The fact is that even though clean oil was put in the compressor after overhauling and you are reasonably sure there is none of the old refrigerant anywhere in the compressor, there is a certain amount of condensables and air contained in the pores of the metal and in the oil which will be slowly pumped out under vacuum. This is what gives you the indication of a leak, either by the bubble test or by the building up of pressure on the head gauge.

GRUNOW PUMP DIRTY

QUESTION 609: Why do Grunow compressors (semi-hermetic) often fail to reduce the pressure enough in the evaporator so as to maintain an "on" and "off" cycle with the desired temperature? Assuming that all other component parts are in good condition, could it be a scored cylinder? The particular unit I am thinking of did not show any evidence of a scored cylinder. The rotor or shaft would bind. It could be loosened with a wrench but as soon as it was assembled, the compressor would stick or bind again. What would cause a condition like this?

Another Grunow that I could not understand ran continuously. Upon external examination of the evaporator, I found it in a completely frosted condition with exception of the one particular spot where the thermo bulb was clamped. I could not find the cause of the trouble so just moved the bulb to a frosted part of said evaporator. So far as I know, the machine has run satisfactorily for three years. But still there remains that one small unfrosted spot on the evaporator. Is there any reason you can think of?

Let me summarize these questions so as to be more clear.

1. What causes (bladed or vaned) type rotary pumps to fail to accomplish their mission?

2. Why should the drive shaft or rotor bind on these particular units? How about a broken buffer spring warping the shaft?

3. Other than an oil logged condition, why the one small unfrosted spot on the Grunow evaporator?

ANSWER: The rotor on Grunow compressors will stick usually because of carbon formation in the cylinder or because of a copper coating which you may find on the vanes of the rotor and on the walls of the compressor. This copper coating is the result of very small quantities of moisture setting up an acid condition which in turn causes a copper coating on working parts of the compressor. This copper coating will build up to the extent that it will actually bind the compressor.

The only remedy is a thorough cleaning and lapping of compressor parts to remove all traces of the copper. A worn spot in the evaporator is usually caused by poor circulation of refrigerant at that particular point. It may be due to oil congealed in the evaporator or to stoppage caused by foreign matter in the system. I think it is possible that if you would use rags soaked in hot water and apply them to that particular spot when the unit is shut off, you may be able to clear the condition.

S S S

E. E. ANDERSON has opened a new commercial and domestic refrigeration service in Santa Rosa, Calif. He has operated a similar service at Taft for two years.

S S S

John P. Kern
Jefferson, Wis.

The REFRIGERATION SERVICE ENGINEER is a fine little magazine. I wish it would come once a week instead of monthly.

. . . to improve the operation of your condensing units

CONDENSING UNIT MANUFACTURERS: Here's some "help" you can hire, and they won't have to get a release from the War Manpower Commission—they can start to work for you right now!

Yes, Temprite's Oil Separators and Accumulator-Interchangers, together with their engineers, are ready to go to work for you anytime you need them—whether it be for immediate or postwar needs.

For example, auxiliary equipment such as oil separators and heat exchangers play an important part in the operation of low temperature refrigeration equipment, but very often not enough consideration is given to these important items, in the design and construction of basic equipment.

This is where our engineers can be of help to you in working with your designers on the application of our standard Oil Separators and Heat Exchangers. Where these items do not meet the exact requirements our engineers are able to evolve special designs for your individual problems.

If you are redesigning your condensing units perhaps our engineering staff can be of assistance. A letter today to our sales department will bring you full details.

TEMPRITE PRODUCTS CORP.

Originators of Instantaneous *Liquid Cooling Devices*

45 PIQUETTE AVENUE . . . DETROIT, MICHIGAN

Refrigeration Advisory Committee Holds Meeting on Industry Problems

A MEETING of the General Refrigeration and Air Conditioning Industry Advisory Committee was held at Washington, D. C., June 14 to discuss the disposal of surplus property, delivery schedules on compressor equipment, refrigeration repair parts and subjects of general interest.

Definite plans for the disposal of surplus property have not yet crystalized, Sterling Smith told the committee. However, close cooperation between the WPB and the Surplus War Property Administration seems assured. Mr. Smith said that members of the committee might send to the Division individual letters outlining their thoughts on the disposal of surplus war property and on problems that might arise in connection.

The legislative branch of the Government is giving consideration to legislation on the disposal of surplus war property, Mr. Smith said. A conference with representatives of the Senatorial Committee on Post-War Economic Policy and Planning, he reported, indicates that a bill giving broad powers to an administrator is favored.

Delivery Schedules on Compression Equipment

Because of the many requests received by the Division for upratings on compression equipment, Mr. Smith said, information is desired from the committee on the delivery time on AA-1 ratings for (1) fractional horsepower compressors and (2) integral horsepower compressors up to and including 25 h.p.

A summarization of the individual statement submitted by committee members revealed the following information:

DELIVERY TIME ON AA-1 RATINGS

Item	Minimum Delivery Time days	Maximum Delivery Time days	Average Delivery Time days
Fractional horsepower compressors	35	240	112
Integral horsepower compressors up to and incl. 25 h.p.	36	150	96

The Motor Situation

The committee was informed that the fractional horsepower motor situation is still tight. To clarify the motor situation, F. W. Gardner (Director of the General Industrial Equipment Division) stated, the WPB is going to require special authorization to be obtained after July 1 for permission to purchase fractional horsepower motors as well as some of the smaller integral horsepower motors. A special application form will be provided for outlining requirements (quantity and time when the motors are needed) and end use, and authorizations will be granted on this basis. The requirement for special authorization will apply to all orders already placed with motor manufacturers. Committee members reported that motors are the greatest industry bottleneck; delivery time ranges from 10 to 12 months.

MRO Extensions

Committee members reported that MRO extensions do not interfere with equipment deliveries for new facilities. They attributed the request for upratings to the bottleneck.

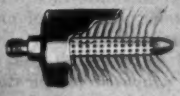
Refrigeration Repair Parts

Sterling Smith called attention to the recommendations made at the committee's last meeting, that refrigeration repair parts inventory restrictions on jobbers and manufacturers be relaxed or removed and that efforts be made to obtain higher priorities for the production of repair parts.

Uprating of Orders—The GIEQ Division, in cooperation with the Wholesale and Retail Trade Division, has succeeded in obtaining approval for uprating orders placed before February 1 for certain types of repair parts. This information was telegraphed to the industry; and since that time air-cooled and water-cooled condensers have been added to the list of items. Mr. Sterling Smith pointed out, however, that only a few applications for upratings have been received by the Division.

AA-1 for Production Materials—The Urgency Rating Committee has approved a

Cross section of Type 743 Henry Dehydrator.



Greater Efficiency Because of Patented Dispersion Tube. Entire volume of the dehydrant is exposed to penetration by refrigerant.

Strainer Tube Can Be Easily Cleaned or Replaced. The reinforced monel strainer tube is silver soldered to the outlet fitting eliminating by-passing of the refrigerant.

Abso-Dry Pressure Sealing Process. Loosening of seal cap prior to installation produces hissing sound due to escape of dehydrated air indicating that dehydrant is absolutely dry.

One Piece Drawn Brass Shell. Type 743 Dehydrators in the 6" length are drawn in one so that they have only one joint—hermetically sealed at the factory.

Easy to clean! Easy to restore to original efficiency by merely replacing the dehydrant! These are your first reactions when you remember field problems encountered in servicing Refrigeration and Air Conditioning installations. Apart from the refillable feature, however, Type 743 Henry Dehydrator should be the choice of anyone interested in more efficient removal of moisture in a system. This is because many of the standard Henry features of design and construction that have made Henry Dehydrators the choice of the Industry are incorporated in this refillable dehydrator. You will find these features described in detail on the left.

Type 743 Refillable Dehydrator is available in a series of sizes and capacities that will take care of the majority of commercial installations. Best of all, the unit is so reasonably priced that it will pay any service or contracting organization to use it as standard equipment.

HENRY VALVE CO.

3260 WEST GRAND AVENUE, CHICAGO 51, ILLINOIS

PACKLESS AND PACKED VALVES • STRAINERS • DRYERS FOR REFRIGERATION AND AIR CONDITIONING AMMONIA VALVES • FORGED STEEL VALVES AND FITTINGS FOR OIL, STEAM AND OTHER FLUIDS

APPROVED FOR NAVY, MARITIME COMMISSION AND ARMY USE

AA-1 rating for production materials for MRO orders when filed against Code 815. Letters have been sent to the industry, suggesting that CMP-4B applications for materials for repair-parts production be filed against Code 815.

Inventory Restrictions — An amendment to Order L-68 which will in effect remove the inventory restrictions on refrigeration repair parts is in WPB circulation.

Proposed Amendment to M-28

The Freon Situation—F. B. Millham (General Industrial Equipment Division) reported that the May freon production of 3,250,000 pounds did not meet expectations. Sufficient carbon tetrachloride and hydrofluoric acid to operate plants at maximum capacity was made available, but cylinders could not be filled as fast as the Freon could be produced.

An allocation of 600,000 pounds has been set up for civilian and industrial uses during June; of this amount, 335,000 pounds have been allocated to contract agents for distribution though jobbers and distributors. The Freon inventory on June 1 was slightly more than 1,000,000 pounds.

The Chemicals Bureau Requirements Committee has set aside sufficient carbon tetrachloride for the remainder of 1944 to permit freon producing facilities to operate at maximum production as estimated by the Kinetics Chemicals Company.

Proposed Amendment to the Freon Order —At the last meeting of the committee, the policy of the Appeals Board with regard to granting appeals for F-12 gas for air-conditioning systems which are denied Freon under M-28 was presented. A proposed amendment to Order M-28 states the policy and would permit the General Industrial Equipment Division to authorize the use of Freon for the specifically listed types of installations without the necessity of having to follow the present appeals procedure. Under the proposed plan, applications would be checked by the WPB field service representatives and would be referred to Washington for action; this will expedite service. Some opposition to the proposed amendment has been expressed, Mr. Millham stated, on the theory that publicity incident to the issuance of an amendment might create the impression that Freon is plentiful and might result in increased commercial usage.

Committee members were unanimous in their approval of the proposed amendment. They pointed out that the policy is established; to avoid the possibility of favoritism, attention should be called to the policy through the publicity that will result. The present flexibility in granting Freon will not be lost through the inclusion of the policy in the order; if the need for greater conservation arises, the Division's policy in granting Freon can be tightened. A press release calling attention to the fact that Freon is not plentiful could be issued with the publication of the amendment. Mr. Millham stated that the June allocation of Freon is the same as the May allocation, i.e. 75,000 pounds. Navy members of the Freon Allocation Committee believe, however, that the figure will have to be reduced and that there will be no relaxation in the situation until the East Chicago plant is in operation. The Office of Civilian Requirements believes that each appeal should be judged on its own merits rather than on the basis of an established policy.

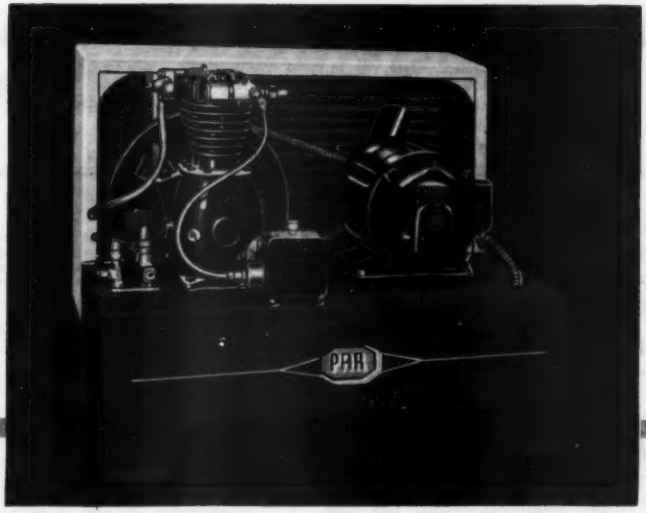
Clarification of Order L-38

Sterling Smith informed the committee that after some weeks of planning, an outline of a complete rewrite of L-38 had been drafted. Mr. Fred Smith presented the outline of the proposed clarification of Order L-38, designed to simplify its provisions in a manner that will permit the Division to implement programs more promptly. Under the proposed plan, all of the present lists in the order would be eliminated and a rate of production would be set up in a quota schedule.

The general objectives of the proposed changes were approved by the committee. Mr. Fred Smith stated that a draft of the proposed revision of the order will be prepared and presented to the committee for discussion at its next meeting.

DEALER VIOLATES CEILING PRICE

OFFERING for sale a used electric refrigerator at an excessive price cost W. P. Kerwin, a milk driver of Ottawa, Canada, a nominal fine of $10 and costs. The fine was imposed by an Ottawa magistrate after L. I. Hind, Wartime Prices and Trade Board investigator said the accused, who pleaded not guilty, admitted he did not know the ceiling price but figured $300 was not too much to ask for a refrigerator which he purchased six years ago for $165.



Par Model HA-10

- **For soda fountain . . . meat case . . . walk-in cooler . . . and small dairy cooler applications.**
- **A 2 cylinder 1 H.P. husky air cooled unit built for economical, trouble free service.**
- **Large condenser, slow speed, fast pump down are outstanding features of all PAR units.**
- **Write for illustrated brochure of details.**
- **BY COMPARISON—YOU'LL BUY PAR.**

PAR Division

LYNCH
MANUFACTURING CORPORATION
Defiance, Ohio, U.S.A.

Refrigeration Service Engineers Society

Official Announcements of the activities of the International Society and Local Chapters appear in this department as well as articles pertaining to the educational work of the Society.

THE OBJECTS OF THE SOCIETY

To further the education and elevation of its members in the art and science of refrigeration engineering; for the reading and discussion of appropriate papers and lectures; the preparation and distribution among the membership of useful and practical information concerning the design, construction, operation and servicing of refrigerating machinery.

INTERNATIONAL HEADQUARTERS: 433-435 North Waller Ave., CHICAGO 44, ILL.

ELM CITY CHAPTER FILES PETITION FOR CHARTER

PETITION for charter in The Refrigeration Service Engineers Society has been received from New Haven, Conn. The application is signed by 84 members, two of which are members-at-large. In addition to the 82 charter members, two additional applications have been received for membership. It is the intention to include all of New Haven County, Connecticut under the territorial jurisdiction of the Chapter.

Officers have been elected as follows: *President,* Lee J. Wallace; *Secretary,* Thomas B. Howell; *Treasurer,* A. J. Cohen.

The new Chapter has conducted three well attended meetings at the auditorium of the United Illuminating Co. in New Haven. The first of these meetings was held under the direction of Charles C. E. Harris representing the International Society.

The application carries the following signatures:

Andrew Avena
Rex F. Barnes
John T. Bendel
Joseph Berg
Adolph G. Blomberg
Raymond H. Clouet
A. J. Cohen
Frederic Cunningham
Elmer W. Davis
Philip L. DuBois
Christian Engelhardt
Carl F. Ganter
F. W. Ganter
Alfred Hazard
Thomas B. Howell
David E. Hungerford
Frank Ippolito
Walter I. Lines
George H. Linsley
Fred Montesanto
Frank W. Moran
F. E. Morley
Arthur S. Murphy
Clarence Nelson
William J. Paine
Alton D. Price
Ralph Ricardo
Ralph F. Rice
Harold Rieger
Charles L. Roberts
Louis Schettino
Albert Schilf
Charles A. Smith
Arthur J. Tickell
Lee J. Wallace
Raymond E. Westlund

NEW CHAPTER ORGANIZED AT READING, PA.

APPLICATION for a charter in The Refrigeration Service Engineers Society has been filed by the new Reading Chapter at Reading, Pa., with 24 members, one of whom is already a member-at-large.

The application carries the following signatures:

Preston D. Epler
Joseph Heltzinger
Clarence E. Close
Bernard Lellig
Wayne A Epler
Russell M. Pease
Ralph R. Gardner
Edmund H. Shoemaker
Geo. Frederick
Bruce B. Kezerise
Floyd C. Berger
Earl R. Moatz
Harold F. Baisch
Elwood C. Kuser
J. Russell Sassaman
Joseph J. Perroth
Milton Reitz
Leon L. Nester
Marvin B. Letcher
S. C. Mathias
C. J. Evans
O. A. Larson
Charles L. Guldin
Carl M. Snyder

EVANSVILLE AND TRI-STATE CHAPTER

AN application for a charter in The Refrigeration Service Engineers Society has been made by the new Evansville and Tri-State Chapter, Evansville, Ind. William E. Anglin has been elected *President* and Charles D. Powell, *Treasurer.* The application was signed by 40 members as follows:

Earl Kinsey
Howard C. White
William E. Anglin
Charles D. Powell
William Berkemeier
J. M. Prado
E. F. Hufnagle
E. J. Miller
L. O. Funke
Clark T. Beaven
Wm. Berkemeier
Chas. P. McCullough
Franc Gustafson, Jr..
Ben Griese
Frank Thomas
Florian Weinzapfel
Ralph Brown
Dennis W. Lammert
Frank G. Shipman
Chas. Wm. Van Stone

MAINTENANCE TIPS

for users of "FREON-12"

No. 3

EMPTYING CYLINDERS

Today, the importance of completely emptying cylinders of "Freon-12" cannot be overemphasized. Haphazard methods may result in loss or waste of as much as 6% of the total charge as vapor in a standard 145-pound cylinder.

Close observance of the following suggestions will enable you to obtain full weight from every cylinder:

1.

Place the "Freon-12" cylinder with hood on scale to obtain gross weight.

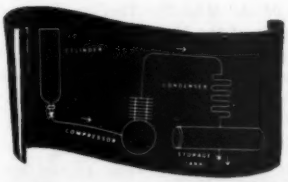
2. Remove cylinder from scale and place it in a bucket or barrel of hot water not exceeding 125° F.

3.

After cylinder is thoroughly heated to increase pressure, remove from hot bath and invert cylinder. Connect line to valve, open valve and discharge all liquid "Freon-12."

CAUTION: *Never subject cylinder filled with compressed gas to a temperature above 125° F. Never permit direct flame to touch the cylinder or fuse plug.*

KINETIC
FREON
safe refrigerants
"Freon" is Kinetic's registered trade mark for its fluorine refrigerants.



4. Connect the cylinder to the suction line of the compressor and evacuate the cylinder to 28" to 29" of mercury for a period of 20 to 30 minutes. The "Freon-12" vapor removed from the cylinder is compressed and condensed and discharged into a storage container or charging line.

5. When the cylinder is completely evacuated, close the valve tightly, replace hood and again weigh the cylinder.

6. Subtract tare weight from gross weight of cylinder. The difference represents net weight of "Freon-12" removed from the cylinder. Compare net weight with that shown in column 6 of analyses report accompanying each shipment of "Freon-12." This should be 145, 25, 10 or 4, depending upon capacity of the cylinder.

NOTE: If weights differ, evacuation of cylinder is incomplete.

7.

If determination shows that evacuation is not complete, repeat operation No. 4.

You can be sure you get all the "Freon-12" you pay for by being certain that every cylinder is completely evacuated before it is returned. Reprints of these suggestions will be sent upon request. Write: Kinetic Chemicals, Inc., Tenth & Market Streets, Wilmington 98, Delaware.

● *Please continue to return empty cylinders promptly* ●

BUY A WAR BOND EVERY MONTH

Carl L. Olin	Wilfred M. Pearson
Charles H. McCoy	H. H. Clearlin
Ben Seifert	Lowal Vaughn
Geo. S. Eager	Ollie Schmidt
Carl F. Funke	Clarence Wesselman
Charles F. Yeager	Clarence Martin
F. E. Rubright	J. Howard Priest
V. E. Jennings	Wm. J. Aulsebrook
Charles E. Good	Russell Davis
John Warner	D. Earl MacLoad

R.S.E.S. Chapter Notes

WOLVERINE CHAPTER

Lansing, Mich., May 22—This meeting followed a dinner at the Home Dairy sponsored by the Lifsey Distributing Co. A very interesting and educational talk on expansion valves was given by Mr. Carter of the Detroit Lubricator Co.

MILE HIGH CHAPTER

Denver, Colo., June 12—The annual election of officers was held at this meeting with the following results: *President,* Charles Land; *Vice-President,* L. W. Barley; *Secretary-Treasurer,* R. C. Kimmel; *Assistant to Secretary-Treasurer,* C. M. Sisson; *Sergeant-at-Arms,* T. E. Ericsson. The new officers thanked the members for their votes and expressed their desire to fill the offices to the best of their ability.

It was decided to have the annual picnic on June 25 at Eltich's Gardens. It was decided to hold the next regular meeting at Colorado Springs, July 10, Mr. Barley being appointed a committee of one to arrange for a meeting place. An official photographer has been appointed whose duty it will be to take pictures of special and unusual events of the Chapter.

SAN DIEGO CHAPTER

San Diego, Calif., June 8—Twenty-two members and three guests were present at this meeting at which two applications for membership were accepted. Plans were made to redecorate and furnish the room which Mr. Anderson has donated for the use of the Chapter meetings. All the materials and labor are to be furnished by members and a special meeting will be called in the near future for this purpose. This will give the San Diego Chapter a high class meeting place.

A. V. Wills, southern refrigerator representative, gave an interesting talk. Mr. Wills is a member of the Los Angeles Chapter and he gave some new ideas for future meetings.

TWIN CITIES CHAPTER

St. Paul and Minneapolis, Minn., June 27—L. G. Lindsay, Vice-President of the United Refrigeration Chemical Division, manufacturers of Silica Gel, gave a very interesting lecture on the manufacture and use of Silica Gel.

At the business session, the President appointed George Klahn as Treasurer. Following a discussion of the annual picnic, Mr. Klahn was appointed Chairman of the picnic committee.

At a previous meeting, arrangements were made to have a number of cardboard signs "Emergency Refrigeration Service" printed and made available to the members.

Applications of Edward Asproth and Elroy A. Lehn for active membership have been accepted.

MAGNOLIA STATE CHAPTER

Jackson, Miss., June 14—An educational meeting was held at the G. E. Supply Corp., twelve members being present. Mr. Knox of the Detroit Lubricating Co. and Mr. McFerrin with the United Service Co., Memphis, Tenn., were guest speakers. They presented a film on Detroit valves and control.

May 24—This was an educational meeting held at the G. E. Supply Corp., eighteen members being present at roll call. Mr. Frazee, who was in charge of the program, showed and discussed a film on "Thawzone." Mr. Porter, Stokes Engineering Co., Jackson, Miss., was a guest speaker and his subject was "Insulation for High and Low Temperatures." There was also a discussion on cork, fiber board and fiber glass as an insulation material.

BOSTON CHAPTER

Boston, Mass., June 13—The June meeting was held at the Hotel Manger. A committee was appointed to handle the affairs of the coming state convention. The committee was made up of James McCue, C. Borden, Wm. D. Paulin and M. P. Handspicker.

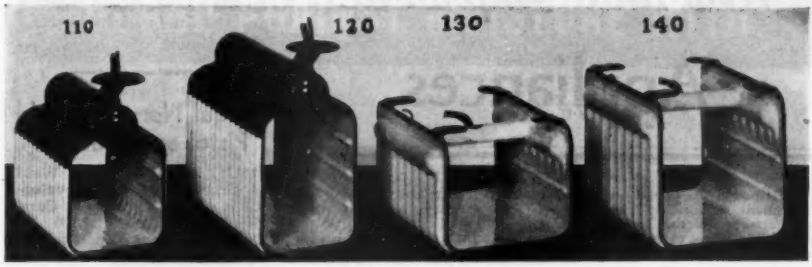
At the May meeting, E. H. Alexander of the General Electric Co., Schenectady, N. Y., discussed electronics in controls and covered welding, measuring devices, heating, motor and temperature controls. He showed slides illustrating parts of his talk.

TOLEDO CHAPTER

Toledo, Ohio, June 14—Considerable time was devoted to discussing the certificate membership. Many are interested in this to the extent that they wish to take the examination.

(Continued on page 52)

Used Evaporators—No Exchanges

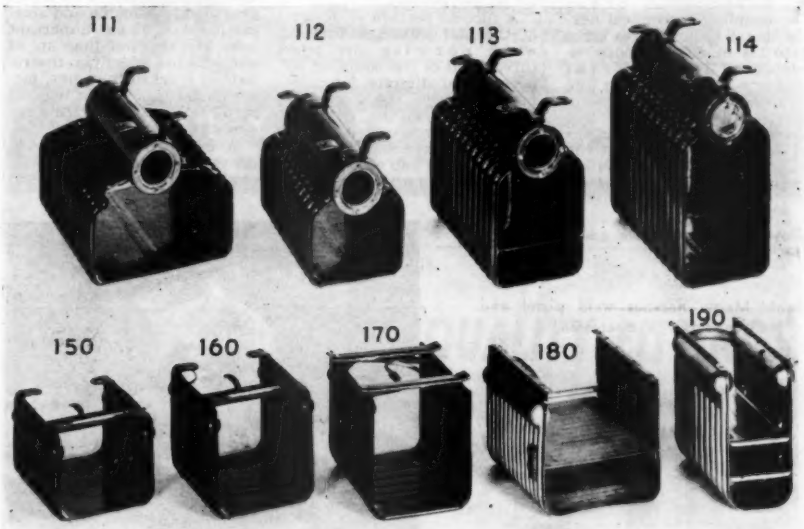


EVAPORATORS—FLOODED TYPE

110—2 Tray Goose Neck..... 130—8½" w. 7½" h. 11½" d. .....
120—3 Tray Goose Neck..... 140—8½" w. 9½" h. 11½" d. .....

$6.75

Black, white and combination. On No. 110 and No. 120 leakproof lines $2.50 extra



111 .....$15.00 112 .....$15.00 113 .....$16.75 114 .....$18.75
150 .....$11.25 160 .....$11.75 170—9½x12x8½ $12.50
180—12x10½x12½ .....$18.75 190 .....$18.75

MULLINS LOW SIDE FLOATS FOR THESE EVAPORATORS, $4.65
EXTRA ALUMINUM SHELVES.....$0.75 each

Porcelain Evaporators—Refinished Like New

Kelvinator, Gibson and All Others; Leaks Welded, Reporcelained in Blue. We have on hand certain models of evaporators to exchange—no waiting. Send in your old evaporator—Exchange Price, $12.50. NOTICE—Remove all fittings and no evaporator will be accepted with any welds.

All Prices F.O.B. Chicago, Ill.

ACME REFRIGERATION PARTS CO.

5217 W. Madison St. Telephone Columbus 4141 **Chicago, Ill.**

New and Improved Appliances

Information contained in this department is furnished by the manufacturer of the article described and is not to be construed as the opinion of the Editor.

New Detachable Coupling

A DETACHABLE brass coupling for helical flexible metal hose in sizes from ¾ to 1½ in. I.D. has been developed by Packless Metal Products Corp., offering the advantage of being mechanically self-sealing. No brazing is employed, no heating of the hose to weaken it at the point where flexing and vibration place the greatest strain on the hose.

The unit consists of only four parts, the nut, back, stem and split ring. When assembled the convolutions of hose and the metal braid are securely held by pressure between the members as shown in the accompanying cutaway view. The coupling withstands pressure tests of up to 800 pounds.

A further feature of design is the self-contained union which permits the pipe thread end of the coupling to be screwed directly into the machine fitting and the union tightened without twisting the hose. This coupling has additional advantages of repeated re-use and easy assembly with ordinary shop tools.

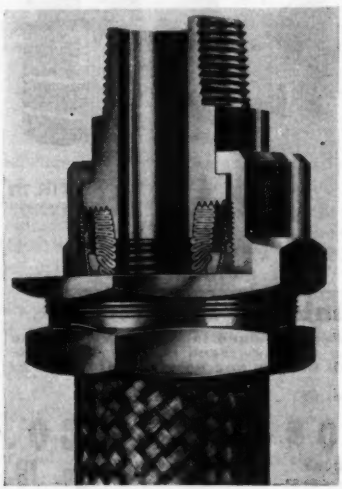
The cross-section shows this detachable coupling attached to the hose, making an absolutely positive leak-proof connection.

Mogul Nervous Weld Pistol and Machine

THE Mogul Nervous Weld Process is a new development of the Metallizing Company of America, 1330 W. Congress Street, Chicago, pioneer manufacturer of metallizing guns and equipment. This new process was developed primarily to solve the problem of reclaiming defective aluminum castings and can be used with equal success in salvaging bronze, grey iron, malleable and steel castings. Other important uses are the building up of surfaces for press fits, the repair of cracked housings, motor blocks, pump housings, as well as the preparation of surfaces for metallizing.

A complete installation to do this type of repair includes a Mogul Nervous Weld

Below: New detachable coupling.



Right: Mogul nervous weld pistol and machine in operation.

GUARD AGAINST MOISTURE WITH

ANSUL

ICE-X

TRADE MARK REG. U.S. PAT. OFF.

ICE-X quickly cures emergency freeze ups when ice forms at the expansion valve or capillary tube. Harmless to use. Great for Freon, Carrene, or Methyl Chloride systems...The dependable liquid anti-freeze.

ORDER FROM YOUR JOBBER OR—

EXCLUSIVE NATIONAL DISTRIBUTOR

THE HARRY ALTER CO. 1728 S. MICHIGAN AVE. CHICAGO 16, ILLINOIS

JOBBERS: WRITE FOR SPECIAL PROPOSITION!

SUPERIOR QUALITY FITTINGS

. . . designed especially for use in refrigerating systems where they must withstand wide fluctuations in temperature, plus considerable vibration. Machined from brass forgings and relief-annealed extruded brass rod to assure uniform density—maximum strength—freedom from season cracking—total absence of seepage leaks.

All threads machined to medium fit (SAE Class 3). Flare threads and faces protected by cardboard ferrules.

SUPERIOR QUALITY FITTINGS are recommended for, and used extensively by refrigeration, machine tool, marine, refining, liquefied petroleum gas, and many other industries.

If you haven't a copy of Catalog R2, Request one today

SUPERIOR VALVE & FITTINGS COMPANY
PITTSBURGH 26, PENNSYLVANIA

Offices in Principal Cities • West Coast Stock: Los Angeles (15) • Jobbers Everywhere

Pistol which requires approximately 60 pounds air pressure at four to five cubic feet per minute and a Mogul Nervous Weld Machine, 110, 220, 440 volts, 60 cycle or 25 cycle, single phase. The latter unit is completely equipped with 2—10 foot lengths of cable, male and female receptacle, pair of goggles, heavy duty ground clamp, 20 foot length air hose complete with fittings, wall receptacle and complete instructions.

The device deposits atomized particles of metal which are welded to the surface and pressed leaving a metal which is welded and forged.

Designed for manual operation, the rod (Aluminum, Bronze or Nickel) is fed through the pistol by a trigger control and it is possible to feed ⅛ to ⅝ in. with one stroke of the finger-grip trigger.

One of its advantages is that it eliminates stresses and distortion in the repair of defective aluminum castings. The temperature never rises above 125° F. and yet provides a deposit so dense at the point of fusion that there is no apparent line of demarcation. Even photomicrographs fail to show the line of demarcation. Aluminum castings, repaired with this unit, machine perfectly and withstand sodium hydroxide solutions used to prepare castings for alumilite plating.

Operating features of this new unit includes power chamber and peening motor, air-cooled nozzle, which keeps electrode as well as the work cooled, finger trigger which permits manual wire feed, needle valve to regulate air supply and electrode lug-connector.

New Fastener Stud

A NEW, all-purpose fastener stud with an adjustable range of nearly one-half inch, has been developed by Nigg Engineering Co. The new fastener stud accommodates total sheet thicknesses from .021 to .500 in., yet locks and unlocks with only a quarter turn. The adjustment is controlled by a central screw which moves a sliding crosspin sleeve through a range of .471 in. The adjustment is made from the outside to any desired tension and locking torque. Once set it needs no further adjustment.

All outside measurements of the fastener stud conform to standard dimensions, making it replaceable with all snap or spring type fasteners now in use. In addition, the Nigg stud fits all existing pin type receptacles including United-Carr, Shakeproof, Right Way and Chicago. The stud replaces as many as 48 lengths of snap or spring type fasteners used today.

The Nigg fastener stud is universally adaptable for new installations and for repair and maintenance work.

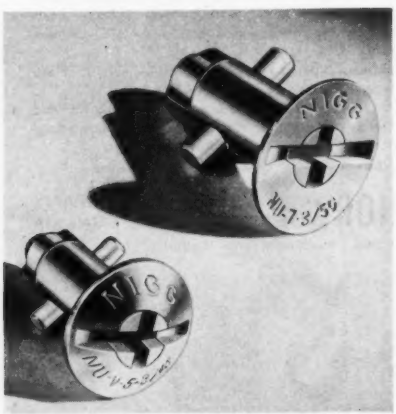
New Spot Welding Timer and Heat Control

SUITABLE for welding small objects of high conductivity such as aluminum or copper, a new precise welding timer with heat control for timing intervals of one-half cycle or less is announced by Westinghouse Electric and Manufacturing Company.

Precise, because the welding current is made to start at the same point on the voltage wave for every operation, the new SP-18, ½ cycle timer is designed for welding of such items as radio tube parts and sockets, pig-tail resistors to terminal lugs, watch and instrument parts, contact tips on electrical relays and other small parts.

The timer is furnished as a separate control for use with existing small bench welders and also in combination with a small welding transformer. Only one control tube is used, this thyratron serving the dual purpose of rectifying alternating current to charge a firing capacitor and also firing the small ignitron power tube. Heat control is accomplished by a phase shift method, the adjustment dial for which is mounted on the cabinet door.

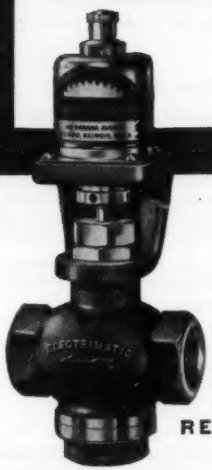
Further information on this timer, rated at 230/460 volts, 50/60 cycles, may be secured from Department 7-N-20, Westinghouse Electric and Manufacturing Company, East Pittsburgh, Pa.



Left: New fastener studs made by Nigg Engineering Co.

Below: Type SP-18 spot timer, showing accessible swing-out panel.

EFFICIENT... ECONOMICAL



TYPE **WP** PRESSURE ACTUATED REGULATING VALVES

Individually tested for efficient, economical operation. WP regulating valves may be mounted in any position and will give lasting, trouble-free performance. Brass body, two ply power bellows and corrosion resistant materials for all internal parts. They are designed not only to start and stop the flow of water but also to feed the economic amount of cooling water to secure the proper condensing pressure without waste. The water flow increases and decreases with the rise and fall of actuating pressure.

WP regulating valves are available in ⅜", ½" and ¾" FPT sizes and other valves of other types are available in sizes ranging from ⅜" to 2" FPT.

Write for a copy of our latest catalog.

Electrimatic

2100 INDIANA AVENUE

CHICAGO 16, ILL.

"An Anchor to Wind'ard"

Any seagoing man will tell you that even the smartest navigators and storm-tested skippers bank on having an "anchor to wind'ard" to help weather the big blows.

U.E.I. BALANCED TRAINING

—designed for the needs of men either old or young in refrigeration—provides a background of reliable technical knowledge and actual shop experience that you can bank on any time.

It is a course of sound, practical home-study instruction balanced with actual shop work; a program that helps prepare men to make the most of the opportunities offered in refrigeration and air conditioning.

Founded in 1927, U.E.I. has been training men in refrigeration SEVENTEEN consecutive years! There is nothing experimental or unproved in the U.E.I. Balanced Training method of helping ambitious men get farther faster. It's worked for years; it's working now.

Stop to think! Wouldn't this training help YOU in your present job—or the one you're aiming at? Then get busy and MAIL the COUPON below for FREE information. Don't wait until tomorrow —do it today, NOW.

MAIL THIS COUPON TODAY

FREE FACTS

UTILITIES *Engineering Institute*

1314 W. Belden Ave.

Chicago 14, Ill.

Please give me more information about Refrigeration and Air Conditioning Training, as promised in your Refrigeration Service Engineer July, 1944 ad.

Name .....

Address .....

City ..... State .....

R.S.E.S. CHAPTER NOTES

(Continued from page 46)

The date for the annual picnic was set for August 20 to be held at Out of Sight Park on Dorr Street.

A brief talk was given by Mr. Stevens of the National Gypsum Co. on Zirocel insulations.

Ladies Auxiliary

KANSAS CITY AUXILIARY

Kansas City, Mo., May 3—A number of letters were read from young men and women in the services acknowledging cards received from the Auxiliary. The entertainment committee was instructed to meet and plan an evening picnic.

S S S

GOVERNMENT BUREAUS

(Continued from page 20)

(2) Seamless copper tubing soft in coils in gauges .082 in. and .035 in. and of an O.D. and type commonly sold as refrigeration tubing, and

(3) Seamless copper tubing soft in coils ½ in. or ⅜ in. O.D. x .049 in. gauge for oil burner service.

Orders which bear the allotment Symbol V-3 which is assigned to repairmen by CMP Regulation No. 9A, may not be accepted by any mill or warehouse unless they are for one or more of these three types of pipe or tubing. This is spelled out in Direction No. 4 to the Regulation.

Direction No. 1 to CMP Regulation No. 9A, amendment of which was effective June 30, 1944, imposes the limit on sales of copper tubing between distributors. It also points out that when a distributor buys from another distributor for the purpose of reselling to a repairman, his order must so state.

No distributor may purchase more copper tubing under the provisions of Direction No. 1, than 6,000 pounds a quarter, unless he is specifically authorized to do so by WPB. This limit applies to distributors regardless of whether they obtain their tubing from other distributors or from mills or producers.

S S S

Kenneth J. Swaski,
Albany, Oregon.

I wish to let you know that I enjoy your magazine very much as it is very informative.

APPLIANCE INDUSTRY ASKS BAN

(Continued from page 30)

what but are regarded as adequate for initial production. Aluminum ice trays may be reintroduced, replacing the steel trays offered in 1942, and if aluminum is plentiful, other uses may be found in cooling coils and elsewhere.

Motors Seen as Bottleneck

The shortage of motors is expected to be the principal obstacle toward establishing a satisfactory initial rate of production in refrigerators. Present output of motors is barely in balance with war needs, and the manpower problems recently induced WPB and the National Electrical Manufacturers Association to issue jointly a booklet for Selective Service boards, reviewing the critical need for motors.

The defeat of Germany is expected to result in cutbacks in plane and other war production which would release enough motors for a partial reconversion of the refrigerator industry. Even if approval of such reconversion were given by WPB July 1, however, it would be January 1, 1945, before any significant production were achieved.

Meanwhile, WPB and OCR are relying upon an unusually large ice box refrigerator program to meet civilian needs. As against a normal yearly volume of 200,000 ice boxes, 800,000 are scheduled for production this year.

S S S

SO YOU THINK YOU HAVE TROUBLES

(Continued from page 25)

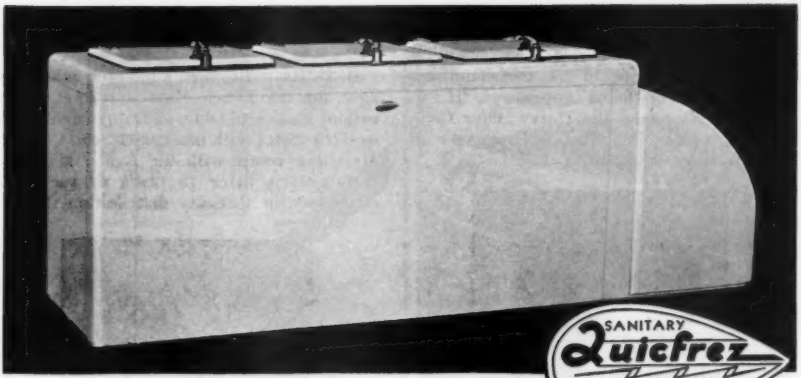
because other complications may develop. Furthermore, it is apparent that no additional refrigerant is needed in the system because the return line is now frosting. The addition of an accumulator to the evaporator should overcome the frosting on the return line. If not, it may be that the float is defective or that the system contains too much refrigerant.

The location of the thermostat bulb is usually near the end of the evaporator. However, the position is not important and can be adjusted for best results.—EDITOR.

S S S

Allen A. Pooley,
Honolulu, Hawaii.

I really enjoyed an article on Sub-Zero Refrigeration in your May 1944 publication.



SANITARY *Quicfrez* FARM LOCKER PLANT

Hundreds of farm families have already proven the benefits of the QUICFREZ in freezing and preserving all farm-grown foods.

There will be **no waiting** for engineering developments when full production is permitted on this new streamlined QUICFREZ FARM LOCKER PLANT.

Descriptive literature now available. Illustrated—Model No. 1544. Capacity, 15 net cu. ft. Holds up to 750 lbs. of frozen meat.

SANITARY REFRIGERATOR COMPANY
Fond du Lac, Wisconsin

BUY WAR BONDS NOW . . . FARM LOCKER PLANTS AFTER THE WAR

Safeguard Your Service with GENUINE CARRENE No. 1

No. 1 on the Carrene label is your safeguard that this refrigerant has been super-refined to a greater degree than any other refrigerant on the market. This means that all impurities have been eliminated, thus removing any possibility of damage to the refrigeration unit.

Remember, Grunow is the only authorized distributor of Carrene No. 1 for household refrigerators. Insist on getting the genuine by checking the Grunow Carrene No. 1 label.

Order from your nearest Grunow parts distributor.

● SEND FOR NEW, CONDENSED GRUNOW SERVICE MANUAL! PRICE 50c

Grunow
AUTHORIZED SERVICE, INC.

FACTORY TESTED PARTS

4313 W. Fullerton Avenue, Chicago, Illinois

HUEBNER WITH ALTER

BRINGING with him a background of wide experience in the merchandising of all types of home appliances, H. C. Huebner has joined the Harry Alter Company of Chicago as the sales manager of the Appliance Division.

H. C. HUEBNER

This announcement by Harry Alter, president of the company, follows closely upon the securing of Crosley Appliances and Coleman Heating products for distribution in the northern Illinois and Indiana areas, and is in line with the company's determination to build a distributing organization which will be a model of efficiency in rendering service to dealers.

Starting in 1924 as the distributor for Frigidaire in Chicago, Mr. Huebner directed operations there until 1936 when he was sent to the Milwaukee territory as branch manager of Frigidaire to intensify the selling activities in Wisconsin. Leaving Frigidaire in 1938 to become district manager for Easy Washing Machine Company in the twin cities, Mr. Huebner served ably with this organization until 1939, when he was induced to return to a post with Frigidaire in Chicago. He remained in this position until priorities compelled a cessation of activities.

DAVISON CHEMICAL GIVEN AWARD

THE Davison Chemical Corporation's plant at Curtis Bay, Baltimore, has received the Army-Navy "E" award for outstanding production, the War and Navy departments announced recently.

BERK NOW LYNCH ZONE MANAGER

B. D. BERK has been appointed zone manager for the Lynch Manufacturing Corporation, Defiance, Ohio, covering eight Midwestern states with headquarters in Chicago. Mr. Berk comes with the Lynch Manufacturing Corp. after 18 years of successful experience in specialty distribution through

B. D. BERK

automotive and specialty jobbers. During this time he progressed from missionary man to zone manager for one of the Nation's leading manufacturers. His knowledge and experience fits him well for this new assignment.

LEWIS JOINS PERFEX CORP.

CARROLL E. ("BORIE") LEWIS has joined Perfex Corporation, Milwaukee as vice-president and manager of the Controls Division. Mr. Lewis comes to Perfex from the Delco Appliance Division of General Motors Corporation, Rochester, where he has served as general sales manager for the past five years. He originally joined the Frigidaire Division of General Motors, later becoming the Air Conditioning Sales Manager of Delco-Frigidaire Conditioning Division.

Refrigeration Engineering and Appliance Co. of Seattle has moved into new quarters at 2018-2020 Third Ave. New, streamlined showrooms set off the appliance displays and a series of glassed-in offices aid routing of work.

Millions
now in daily use

● Always remember, Aerovox has made the major portion of those millions of motor-starting capacitors now in daily use. And Aerovox is offering the outstanding line of Victory replacements to help you keep those refrigerators going for the duration at least. ● Ask our jobber for Aerovox motor-capacitor replacements. Ask for latest listings. ● Or write us direct.

AEROVOX *Capacitors*
INDIVIDUALLY TESTED

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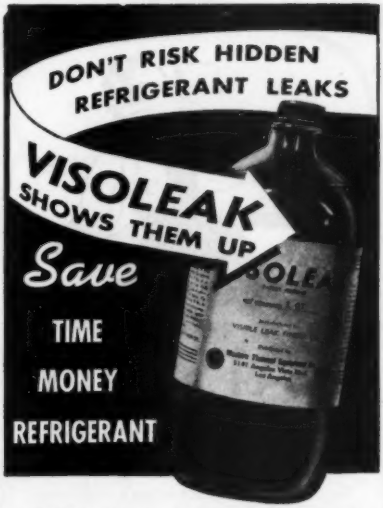
In Canada: AEROVOX CANADA LTD., HAMILTON, ONT.
Export: 13 E. 40 St., New York 16, N.Y. Cable: "ARLAB"



VISOLEAK keeps a ceaseless vigil for those hard-to-find leaks which have always been the Refrigeration Engineer's headache.

VISOLEAK is a finely-treated colored refrigerant oil which penetrates every nook and cranny of the system. The leak is indicated by a red stain — just like the discoloration on a carburetor in which ethyl gasoline has been used. Can be used *safely* and *effectively* with any type of refrigerant.

VISOLEAK is economical.

Wholesale Prices		Save 10% on case lots
4 ounce bottle	$1.00	48 bottles
8 ounce bottle	1.75	24 bottles
1 pint bottle	3.00	24 bottles
1 quart bottle	5.00	12 bottles
1 gallon can	16.00	6 cans

See your jobber or write for complete information

WESTERN THERMAL EQUIPMENT COMPANY
5141 Angeles Vista Blvd., Los Angeles 43, Cal.

Please send me complete details about *VISOLEAK*.

Name_____

Address_____

HATS OFF

he is an important man!

—doing a big job in food preservation by maintaining America's refrigeration facilities. He has his hands full, with limited man power and available supplies.

HERVEEN

is his big helper in these critical days. Because when it is a gas replacement

to **SERVICE**

METER-MISERS

Herveen is the reliable standby.

Time is the service man's most valuable business asset. Save time and call backs by having Herveen available at all times in the shop and service car.

Most jobbers stock HERVEEN—if yours doesn't, write direct to

MODERN GAS CO., Inc.

Manufacturers and Refiners

1084 Bedford Ave., Brooklyn 5, N.Y.

NEW GENERAL CONTROLS BRANCHES IN BOSTON AND CLEVELAND

IN LINE with plans for strengthening field distribution and service facilities, General Controls Co., Glendale, California, recently occupied new branch office quarters at 687 Boylston St., Boston 6, Mass., and at 1505 Broadway, Cleveland, Ohio.

L. E. WETZEL

WM. MARSH

General Controls' Boston Branch is under the direction of Branch Manager William Marsh. A native New Englander, born in Manchester, N. H., Marsh has had 20 years' experience in the automatic controls industry. He has been instrumental in the development of numerous controls for both the gas field and sectional control applications.

L. E. (Rusty) Wetzel, Cleveland Branch Manager, is a native of that city, a graduate of Purdue and John Huntington Institute Technical College where he majored in air conditioning, heating and ventilating engineering. His field experience covers 16 years in the refrigeration and general installation fields.

NEW McINTIRE DISTRIBUTOR

THE McIntire Connector Company, of Newark, N. J., producers of the D F N line of dehydrators, strainers, and allied refrigeration equipment, announces the appointment of F. M. Eversden & Associates, Philadelphia, Pa., as its representatives in the territory comprising Pennsylvania, Delaware, Maryland, District of Columbia, and the southern half of New Jersey.

Mr. Eversden was connected for several years with the Kerotest Manufacturing Co., and prior to that was District Service Manager of the Service Parts Division of the Borg-Warner Corporation.

PENN RECEIVES THIRD "E" AWARD

EMPLOYEES and officials of Penn Electric Switch Co., Goshen, Indiana, were again honored by the Army-Navy Production Board by the renewal of their Army-Navy "E" Award. This award gives the company a second white service star affixed to the "E" flag and signifies continued excellence in the production of war material. A large part of Penn's production output is the manufacture of complete electrical control circuits for naval guns.

OTTO G. TINKEY

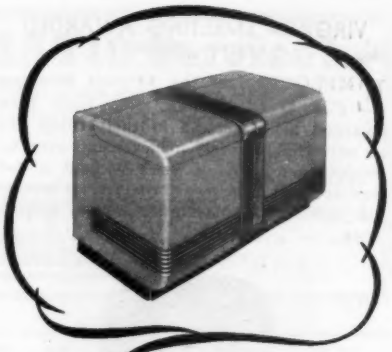
Tinkey Manager at St. Louis

Otto G. Tinkey was recently employed by Penn, as manager of the Company's St. Louis branch office located at 4030 Chouteau Ave. Mr. Tinkey, a graduate electrical engineer, has had more than twenty years of engineering and selling experience in the commercial refrigeration and heating markets. Before joining Penn, Mr. Tinkey was the St. Louis representative for Copeland Refrigeration Company and was also engaged as consulting engineer for various St. Louis manufacturers.

S S S

DAVIS APPOINTED ON EXECUTIVE COMMITTEE RUBBER ASSOCIATION

T. C. DAVIS, vice-president in charge of mechanical sales planning and experimental sales of the Dayton Rubber Manufacturing Company, was appointed a member of the Executive Committee of the Rubber Manufacturers Association at the April meeting held in Cleveland.



In the Post-War Plans of many Farm Families—

The BEN-HUR Farm Locker Plant

Talk to any farmer about a farm locker plant and his first comment will be, "wish we had it now." And he'll follow with the promise that food freezing and frozen storage is the FIRST thing he's going to add after the war.

For most farmers already know the benefits of owning a BEN-HUR FARM LOCKER PLANT . . . the economy, time, and food saving advantages of freezing and storing farm grown vegetables, meat, poultry for delicious meal variety weeks and months later.

This is evidence of your future market for new BEN-HUR FARM LOCKER PLANTS—a volume market ready just as soon as they can be produced.

Let us put your name on the list to receive complete data and sales information on BEN-HUR FARM LOCKER PLANTS, when this data can be released.

TODAY . . . BACK OUR FIGHTING MEN WITH M-O-R-E WAR BONDS

BEN-HUR MANUFACTURING CO.

634 East Keefe Avenue Milwaukee 12, Wisconsin

. . remember . .

BEN-HUR

FARM LOCKER PLANTS

VIRGINIA SMELTING AWARDED SAFETY TROPHY

EMPLOYEES of the Virginia Smelting Co., West Norfolk, Va., have been awarded the American Mutual trophy for an outstanding safety achievement, over 1,000,000 man-hours of work without a lost time accident. The award covered an operating period from March 28, 1942 to May 2, 1944.

A. B. BUTT, JR.

A. B. Butt, Jr., plant personnel director and safety committee chairman, received the trophy on behalf of the management and employees at the Statewide Safety Conference, Roanoke, Va., May 26. In accepting the bronze figure, Mr. Butt paid high tribute to the cooperation of the employees.

American Mutual trophy presented to employees of Virginia Smelting Co.

"These are days," said Mr. Butt, "when practice of safety is not only a fundamental organization policy, but a patriotic duty of the individual worker. This record exemplifies a devotion to job and to country during these days when uninterrupted production is an important contribution to Victory."

CAMERON NEW MERCHANDISING DIRECTOR FOR AIRTEMP

RALPH C. CAMERON has been appointed director of merchandising for Airtemp Division, Chrysler Corporation, according to an announcement by Paul B. Zimmerman, vice-president and general sales manager. Mr. Cameron will continue to direct postwar planning activities of the company.

RALPH C. CAMERON

The newly created position will place all advertising, sales promotion, and sales training activities of the Division under the supervision of Mr. Cameron for the purpose of providing coordinated sales campaigns, sales training, promotional programs, and advertising for each of the Airtemp lines of air conditioning, commercial refrigeration and automatic residential heating.

V. P. Black will continue as advertising manager, W. H. Knowlton, sales promotion manager, and Paul H. Dow will be in charge of sales training. Under the new program it is contemplated that these merchandising departments will be expanded as rapidly as possible to meet the needs of the organization's marketing activities in the postwar period.

WOLVERINE TUBE CHANGES

THE resignation of Otto Z. Klopsch as vice-president, director and general manager of the Wolverine Tube Division has been announced by Calumet and Hecla Consolidated Copper Company. A. E. Petermann, president of Calumet and Hecla, also announces that H. Y. Bassett has been made acting manager of the Wolverine Tube Division.

What is AUTOMATIC Service?

Where every customer receives individual service promptly and, most important, where a complete stock insures the right part for the job

Our South Side Branch, 809 W. 74th St., Chicago, has a complete stock for your convenience.

Automatic
HEATING & COOLING SUPPLY CO.
647 WEST LAKE STREET, CHICAGO, ILLINOIS

The Parts you need are in our stock.

300 YEARS OF EXPERIENCE

Do you realize how long it takes to 'graduate' from the 'School of Experience'? Of course you never stop learning but the man who will learn and benefit from the experience of others who have travelled the same road before, is bound to be successful. The staff of instructors who molded our course of training represent an aggregate of 300 years of experience. All the ability and knowledge gained by these men over this long period of time are available to you. In just a few months you can get the 'know-how' that would otherwise take years to obtain from field work alone. Such complete and comprehensive knowledge will put money in your pocket. The same exclusive training system used by the U. S. Army is offered to you in either Resident courses or Home Study combined with actual shop work. Write today for free booklet.

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Scale, Rust, Slime, Sulphur Deposits, etc., are thoroughly, safely, and economically removed by the use of NOBS CLEAN-OUT SOLVENTS.

Nobs specialized Solvents and Water Conditioners are used by manufacturers of cooling and refrigeration systems and by service men and operators.

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WRIGHT

HEAD-BACK PRESSURE CALCULATOR

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Carrene — Methyl
Isobutane — Freon or F-12
Sulphur Dioxide — Ammonia
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Postpaid $1.00

NICKERSON & COLLINS CO.
435 N. WALLER, CHICAGO

For the "LONG PULL"

—use *Kramer* when you need refrigeration parts and supplies. We recognize our responsibility to the service engineer in getting every available part and supply to be obtained.

We are building our business for the future and the best way to do that is to give the best service now. Try us.

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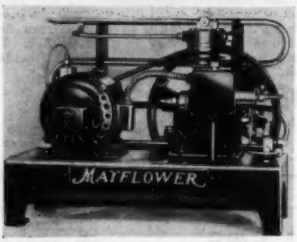
UNITS AND PARTS



COMPLETE stocks of genuine Mayflower air and water-cooled Condensing Units, and all Mayflower Parts, are now available to meet your priority requirements. Service men, consult your jobbers, or write us direct. Jobbers, we solicit your inquiries.

MAYFLOWER PRODUCTS, Inc.
13 S. 5th St.
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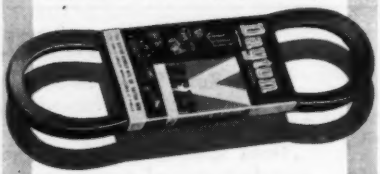
Dayton

V-BELTS

FOR ALL LEADING MAKES OF HOUSEHOLD APPLIANCES AND OPEN-TYPE UNITS

In the interest of conservation, see that Victory Vital V-Belts are properly installed with rust-free pulleys in correct alignment and with proper tension.



THE DAYTON RUBBER MFG. CO.
World's Largest Manufacturer of V-Belts
DAYTON, OHIO

DAYTON RUBBER EXPORT CORP.
38 Pearl St., New York, N. Y., U.S.A.

VALVES and CONTROLS—*NO PRIORITY*

We have a limited quantity of the following valves and controls to sell outright. No exchanges and NO PRIORITY necessary. Each and every valve or control has been thoroughly rebuilt and recalibrated same as new, and each item is guaranteed to operate same as new or we will refund your money if you are not satisfied.

Ranco Steel Body	$3.35
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Cutler-Hammer	3.10
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Auto Expansion Valves
Detroit ⅛" I.P. x ¼" I.P.
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STA-TITE SAFETY RELIEF VALVES

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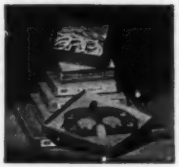
SPEED VICTORY



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• Until Victory is won, war orders come first. Today, our gasket service for every refrigeration need is helping speed war production. Under these conditions, delays in filling other orders are unavoidable.

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USE "CLEAN-A-COIL"

FOR ALL WATER SCALE REMOVAL PURPOSES

CONSULT YOUR LOCAL JOBBER

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EXPANSION VALVES
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Automatic (any make)	$1.50
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COLD CONTROLS

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Commercial (low or pressure)	$2.50
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All work done on money back guarantee.
(All fittings must accompany order)

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—where experienced service men know the most complete stock of PARTS and SUPPLIES is available. Don't forget — Blythe is your stock room.

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Cold Controls · Pressure Switches

One year guarantee on all repairs

Original Factory Specifications

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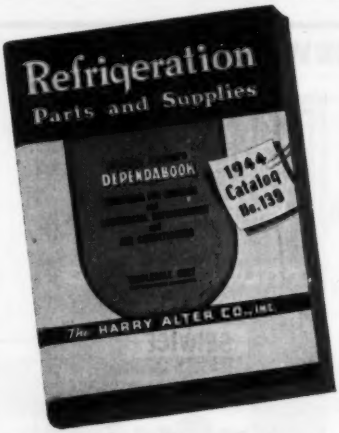

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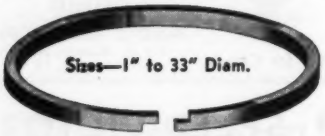
HAS STOOD FOR
Quality Piston Rings
SINCE **1921!**



For a quarter of a century AUTO-DIESEL "Ladle Tempered" Piston Rings have been used as original equipment and replacement for diesel powered units of all types—stationary and mobile units and for hydraulic and pneumatic operated industrial equipment. Down through the years our high quality has been maintained with the result that many prominent firms have standardized on AUTO-DIESEL Piston Rings.

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COOLING and FREEZING UNITS

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Until further notice we will be unable to accept other types of repair work.

ALL WORK GUARANTEED FOR 90 DAYS

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DOOR GASKETS

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Classified Ads

Rate: Two Dollars for fifty words or less. 30 cents for each additional ten words or less.

HELP WANTED—Refrigeration shop superintendent. Must have ability to train and handle men. Thorough knowledge compressor rebuilding, motor repairs, and general shop practice. Permanent position well established organization. Advise experience and salary requirements first letter. Address Box MY-3, Refrigeration Service Engineer, 435 N. Waller Ave., Chicago 44, Illinois.

WANTED—Hermetic Charging and Purging Kit, any make, new or used. S. Miller, 233-155th Street, Calumet City, Ill.

WANTED—Experienced shop foreman by old established New York City concern, to rebuild ice-cream cabinets. Write past experience, salary wanted. Address Box Jul-2, Refrigeration Service Engineer, 433 N. Waller Ave., Chicago 44, Ill.

FOR SALE—Milk Coolers, Bottle Coolers, converted Freezers. 1000 complete High-Sides Frigidaire, Kelvinator ¼ H.P. to 2 H.P. Motors up to 5 H.P. Send for list and price. Edison Cooling Corporation, 310 E. 149th St., New York 51, New York.

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Every issue contains ideas you can use—don't miss an issue.

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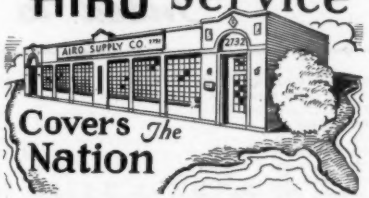

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Refrigeration Parts, Equipment, and Supplies

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DEHYDRATORS
ALL TYPES
REBUILT LIKE NEW

New Felts and New Strainers installed. Refilled with New Dautsen Silica Gel.

Price: $1.00 for up to 1 Ton Dehydrator — F.O.B. New York. All fittings must accompany order.

Send for Our Surplus Stock List!

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HOT WEATHER DEMANDS REFRIGERATION SUPPLIES

We carry large stocks of nationally known supplies. For your convenience try

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Index to Advertisers

Acme Refrigeration Parts Co. 47
Aerovox Corporation 55
Airco Refrigeration Parts 62
Airo Supply Co. 63
Alco Valve Co. 6
Alter Company, The Harry ..... 49 and 62
Ansul Chemical Company 1
Auto-Diesel Piston Ring Co. 62
Automatic Heating & Cooling Supply Co. 59
Automatic Products Company ..... 32 and 33

Ben-Hur Mfg. Co. 57
Blythe Company, H. W. 61
Bonney Forge & Tool Works ..... Back Cover
Brunner Mfg. Co. 00

Chase Refrigeration Supply Co. 63
Chicago Eye Shield Co. 00
Chicago Seal Co. ..... Inside Front Cover
Chicago-Wilcox Manufacturing Co. 61
Commercial Trades Institute 59

Davison Chemical Corp. ..... Inside Back Cover
Dayton Rubber Mfg. Co. 60
Detroit Lubricator Co. ..... 2 and 3
Dole Refrigerator Company 62
Du Pont de Nemours & Co., E. I. 4

Edison Cooling Corp. 63
Electrimatic Valve 51

General Controls 64
General Electric Co. 00
Grunow Authorized Service, Inc. 53

Henry Valve Company 41
Highside Chemicals Company 10
Hubbell Corporation 61

Imperial Brass Mfg. Co. 5

Jarrow Products 62

Kerotest Mfg. Co. 13
Kinetic Chemicals, Inc. 45
Kramer Co., Fred C. 60

Lynch Mfg. Co. 43

Marsh Corp., Jas. P. 9
Mayflower Products, Inc. 60
Modern Gas Company, Inc. 56
Mueller Brass Company 7

Nash-Kelvinator Corp'n. 37
New Duty 62
Nobs Chemical Co. 59

Penn Electric Switch Co. 8

Ranco, Inc. 14
Refrigeration Equipment Co. 63
Refrigeration Surplus Dealers ..... 60 and 61

Sanitary Refrigerator Co. 53
Servel, Inc. 00
Service Parts Company 61
Spoehrer Lange Company 00
Standard Solvent Co. 61
Stangard Dickerson Corp. 00
Superior Valve & Fittings Co. 49

Table of Contents 15
Tecumseh Products Company 12
Temprite Products Corp. 39

United Speedometer Repair Co., Inc. 00
Utilities Engineering Institute 51
Utility Thermostat Co. 61

Virginia Smelting Co. 11

Wants, For Sale, Etc. 63
Weatherhead Co., The 16
Western Thermal Equipment Company 55
White-Rodgers Electric Company 00

K-15

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Wartime manufacturers of Electro-Magnetic and Temperature Controls for Aircraft • Peacetime Producers of Automatic Pressure, Temperature, and Flow Controls.

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SILICA GEL SETS
THE STANDARD FOR
DRYING AGENT
PERFORMANCE—No. 3

WILL NOT *Cake* NOR *Powder*

PROCESSED ESPECIALLY FOR THE DEHYDRATION OF REFRIGERANTS

Davison's Silica Gel is a clean, durable material that will neither cake, powder, nor channel. Keeps its scientifically-determined particle size indefinitely under all conditions within the cartridge, permitting perfect diffusion of the liquid. Maximum pore surface area is exposed to the refrigerant at all times.

Davison's Silica Gel has maximum capacity for moisture, oil will not affect it . . . it acts instantly . . . it removes acids that cause corrosion . . . it will not attack metals or alloys. Effective on Freon, Methyl Chloride, Sulphur Dioxide, etc., etc.

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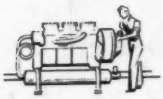
Progress through Chemistry

BALTIMORE-3, MD.

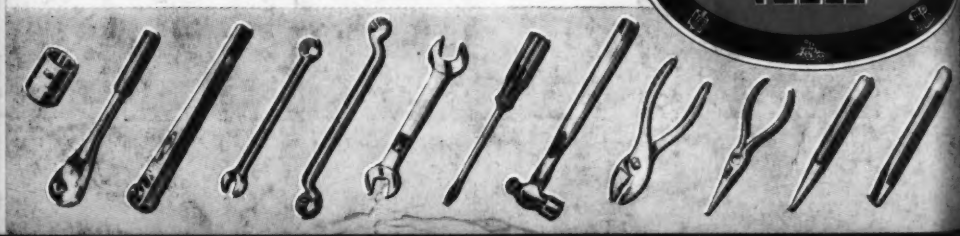
Canadian exclusive sales agents for DAVISON'S SILICA GEL:
CANADIAN INDUSTRIES LIMITED, General Chemicals Division

"I'm set with a Bonney Kit!"



• "The tools in th Bonney Kit I boug really get the wor out! They're built to last! For in stance, this wrench is a natura for heavy all-around use. It's lig weight, but boy, it'll take all th rough handling I want to give i With a Bonney Kit I'm set. And when I need more tools I'm reall going to stock up on Bonneys."

• **"We're The Lucky Guys, Now!"**

"PT boat engines need careful attention, so we get all the Bonney Tools we need now. They sure deliver the goods! When I'm back at the old service station again, it'll be Bonney Tools for me!"

BONNEY FORGE & TOOL WORKS
717 N. Meadow St. • Allentown, Pa.